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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G06F 153/00

A1

(11) International Publication Number: WO 95/26536

(43) International Publication Date: 5 October 1995 (05.10.95)

(21) International Application Number: PCT/US95/03352

(22) International Filing Date: 24 March 1995 (24.03.95)

(30) Priority Data:
218,909 - 28 March 1994 (28.03.94) US

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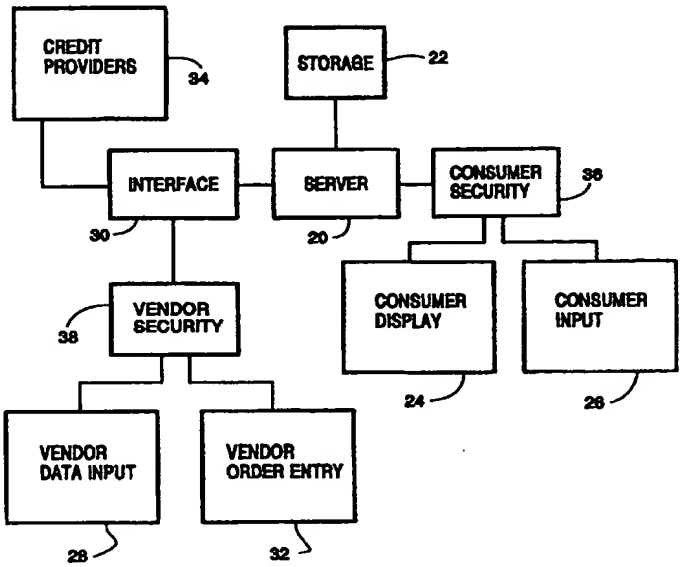
(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TT, UA, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SD, SZ, UG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: INTERACTIVE PRODUCT SELECTION AND PURCHASING SYSTEM



(57) Abstract

A system and method for interactively selecting and ordering products. The system includes a display unit (24) and input device (26) for providing a consumer the ability to efficiently locate, view purchase, and receive information about desired products, without having to be previously well informed with respect to the types of products available and the relative benefits of product features. A live operator at server (20) provides assistance to consumers. Server (20) also stores relevant information in storage area (22). Server (20) is connected to a vendor security credit provider (34) through interface (30) and to consumer security system (36).

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INTERACTIVE PRODUCT SELECTION AND PURCHASING SYSTEM

BACKGROUND OF THE INVENTION

Increases in costs associated with the operation of conventional outlets for goods and services, including costs associated with competition in the marketplace, have impaired the ability of product vendors to provide personal service to individual consumers. Traditional retail stores are forced to field fewer and less educated and trained sales personnel to remain competitive with mass merchants. The selection of products in the conventional retail channels is increasingly limited as retailers display and offer a decreasing percentage of a manufacturer's products within a given product category, due in part to increasing inventory and occupancy costs. Increased advertising costs preclude a broad shotgun approach to advertising, causing advertising to be increasingly targeted to select consumers.

At the same time, the number of products available are increasing, and new features and technological advances are constantly being incorporated into products. These dynamic product characteristics increase the amount of information which is necessary for a consumer to understand in order to satisfy his needs and make an informed purchasing decision.

While the multiplicity of products and product features increases the possibility that a product is available which matches the consumer's specific needs, the knowledge about available products that is necessary for an informed consumer to have is difficult to acquire. A great

deal of time would be required to travel to every outlet for products in a given category to view every possible product choice, and the lack of trained, knowledgeable sales staff may leave the consumer mystified with respect to the availability, purpose and function of various product features. In this environment, direct costs from product returns due to product dissatisfaction are high. Consumer frustration over poor service, inadequate selection and product dissatisfaction cause customer attrition. Product information that is available in other forms, such as television shopping programs or computerized product catalogs, is typically presented in a manner which does not allow the consumer to become educated about the functions and features of particular products and to be guided to a product selection which meets the consumer's needs.

SUMMARY OF THE INVENTION

It is an object of the invention to permit a consumer to have efficient access to information regarding a large number of products available from competing vendors.

It is a further object of the invention to provide a means to educate consumers about products, product features and their benefits.

It is another object of the invention to provide a navigational system to guide a consumer to select, from a large number of available products, the specific product which satisfies his needs and desires.

It is yet another object of the invention to allow a consumer to select and order products at a convenient time and location of his choosing.

It is still another object of the invention to provide a consumer with up-to-date information on product availability prior to ordering.

Another object of the invention is to facilitate the simultaneous ordering of selected products from a variety of vendors.

It is another object of the invention to use high resolution images to convey product information to a consumer in an entertaining manner.

It is further object of the invention to use audio information to convey product information to a consumer in an entertaining manner.

It is yet another object of the invention to provide vendors with a cost effective means of advertising their products.

It is still another object of the invention to provide vendors with a means for reducing operating costs.

It is an object of the invention to provide a consumer with assistance in selecting products which complement or relate to other products.

It is a further object of the invention to provide a consumer with assistance in selecting products to be purchased for another person.

It is a still further object of the invention to provide consumers with a convenient means of cataloging and valuing products in their household.

It is yet another object of the invention to provide consumers with a convenient means of replacing products which have been lost or stolen.

Using interactive telecommunication capabilities, a consumer may employ display and input devices, such as a television and remote control device, or a personal computer, to access a wide variety of product information and to purchase products. The product information is made available in a manner which facilitates product selection and permits a vendor to advertise its products using an integrated multimedia display.

The product information available through the system may include information about both goods and services, and may include information concerning products from a wide variety of vendors, including manufacturers, retailers, value added resellers (VARs), distributors and service providers. Information about each of the products available from each vendor is input by the vendor into a format and classification scheme established by the system. In addition, the vendor designs and inputs a product display for each product. The product display is essentially a short commercial for the product which may include a display of text, high resolution color pictures and graphics, motion video and sound.

To use the system, a consumer registers with the system and provides necessary information to the system operator. Upon registration, each consumer is issued two codes. The first is the user inquiry code, which allows access to the system. The second is the order access code, which allows the user to order products through the system and authorize payment from an existing account. Both codes must be input prior to completing a purchase transaction or accessing personal information of the consumer.

After the initial setup is complete, the consumer can access the system by inputting the user inquiry code. The system then permits the consumer the opportunity to browse through product information, to search for particular products, to access information saved from a previous session, to access his personal information, to request assistance in selecting products and to access household inventory information.

When browsing or searching, the consumer has the ability to limit the scope of information being considered by limiting the products to those of a particular vendor or group of vendors, by limiting the brands of the products to a single brand or a group of brands, by limiting the types of product by product category, or by any combination of vendor, brand, or category limitations. The consumer may also use information in his personal profile, or the profile information of another person, to limit the scope of the browse or search. The consumer may also limit the scope of information being considered to products which

have been designated "new products" or those which a vendor has designated as a "special offer".

In the browse mode, the consumer may sequentially view the product displays for all of the products within the scope of his identified limitations. Text, voice, still pictures and motion video pictures can be integrated into each product display to provide the consumer with a thorough understanding of the attributes of each product.

In the search mode, the consumer may employ a structured approach which provides him with the information necessary to make an informed product selection from the variety of products and product features within a product category. To assist in the identification of a product or products which meet the consumer's needs, the search structure directs the consumer through a narrowing process by a series of prompts which request the consumer to identify product features and options which are of interest. For each product category, the default sequence of the prompts reflects the relative importance of the various product features to average consumers for products in that category. By arranging the sequence of the prompts in an order which simulates the process that a knowledgeable consumer would use in arriving at a purchase decision for a product in that category, the system can efficiently and fully present the relevant information, without the necessity that the consumer initially be well informed. The system also has the capability to provide, on request, further information as to the benefits and

drawbacks of any particular product feature. A consumer may also create a "custom" sequence of prompts for his personal use.

In addition to providing the ability to efficiently navigate through the voluminous product information, the use of a search method employing a system prompt and consumer response helps to guide the consumer to available products, as opposed to the use of search methods which might result in a frustrating situation where no products are found. At the end of the search, the product displays for the products found may be displayed.

In either the browse mode or the search mode, a consumer may select specific products and save them for future reference or ordering. After a product has been selected and saved, the consumer may go to a summary screen which displays product information for the saved products. The consumer may verify the present inventory status of a product, compare different products and cause the system to highlight the differences in the product features, or compare multiple vendors for the same product to determine the best price, terms and availability. The consumer may also request further action with respect to a particular product, such as requesting the identity and location of the nearest vendor or dealer for the product, requesting that a vendor contact the consumer to discuss the product, or requesting that further information about the product be forwarded to the consumer.

The consumer may also indicate that he wishes to purchase one or more of the saved products. Before an order is placed or any credit information is displayed, the consumer must input his order access code, to preclude unauthorized purchases. After identifying the products to be purchased, the consumer selects the method of payment and indicates the desired shipping address or addresses. The amount of the total purchase is transmitted for authorization to the selected credit provider, which may be a credit card issuer, a debit card issuer, an institution offering electronic funds transfer or a similar entity. If the total amount of credit or funds available from the selected credit provider is insufficient to cover the total purchase amount, the consumer is notified in order that he may change his order, select a different payment method, or change modes. If the amount of the purchase is authorized by the credit provider, purchase selections are electronically transmitted through the server to each vendor and the credit provider is requested to provide authorization for the amount of each purchase to the vendor. The vendor electronically confirms inventory, billing and shipping information on screen to the user. On-screen invoices must be approved by the user for final release to the vendor for actual order processing and shipment.

A consumer may also request assistance in selection of products. Product selection assistance is available to guide a consumer to products which are complementary or

related to previously selected products. Assistance is also available to guide a consumer to products which might be an appropriate gift for another person for a specific occasion.

A consumer may create a household inventory for use in valuing and listing the consumer's current household inventory of products for insurance valuation and recording purposes. The user is able to utilize the search capabilities to search and find products that he already owns, or current products which closely match a product that he wishes to replace. Historic product information is available to be searched to provide information on products in a household that may not be currently available. Free form entry, utilizing a keyboard or other forms of input, can be employed to catalog products which are not included in either the current or historical database.

The system maintains records of system usage, and may use various combinations of historic use data to document use and to bill vendors for the use of system. The historic usage data may also be used as a reference for possible modifications to the priority structure of product feature searches, in the generation of demographic and marketing research data, and to permit vendors to determine product demand for maintaining inventory or planning purchasing.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram showing the primary components of the system;

Fig. 2 is a block diagram of a vendor data input device;

Fig. 3 is a block diagram showing some of the possible types of product information for a particular product;

Fig. 4 is a flow diagram of the operation of the system in the inquiry phase;

Fig. 5 is a flow diagram of the operation of the system in the decision and ordering phases;

Fig. 6 is a flow diagram of a portion of the operation of the system in browse mode;

Fig 7. is a flow diagram of a portion of the operation of the system in search mode;

Fig. 8 is a flow diagram of a portion of the operation of the system in the consumer information mode;

Fig. 9 is a flow diagram of the operation of the system in the household inventory mode; and

Fig. 10 is a flow diagram of the operation of the system in the production selection assistance mode.

DETAILED DESCRIPTION

System Components

The main components of this system are shown in Fig. 1. The server 20 is the central point for the system, and may be implemented by a digital computer or group of computers. The server is able to receive and transmit data from a variety of sources, as well as accessing and transmitting stored data. The storage unit 22 may be composed of any of various types of data storage devices,

including arrays of optical or magnetic disks, tape drives, and other devices capable of storing information. Due to the large volume of data which is necessary to implement the system and provide information with respect to a wide variety of products, the storage means would preferably be of a capacity to handle large quantities of data and capable of a rapid transfer rate. Although the storage unit is shown as a single component connected to the server in Fig. 1, it should be appreciated that storage capability could be distributed throughout the system. For example, a portion of the data stored for use by the system might be maintained on a vendor's storage device, particularly data referring to that vendor's products. Similarly, to the extent that the consumer display unit has storage capability, portions of the data could also be stored in that location, such as the information specific to that machine or that consumer. Such information could include the consumer's personal inventory of household items, the summary screen information previously saved by the consumer, the consumer's shipping addresses and information with respect to past purchases.

While all of the information stored on the system may be stored in a digital form, in some instances it may be cost-effective to store and transmit some or all of the information in other forms. For example, a completed product display could be stored as a conventional videocassette recording and transmitted as a conventional television signal.

The consumer display unit 24 preferably has the capability to display information in all of the following forms: alphanumeric text, high resolution still photographs, motion video, still and animated graphic displays, and sound reproduction. While availability of display of information in all of these forms allows the greatest flexibility in the display of information, any single form or combination of forms described above could be used to implement the system if the information on the system is constrained to the selected form or combination of forms.

The consumer display unit may be separate from the consumer input device 26, as in the situation where the display unit 22 is a conventional television and the consumer input device 26 may be a conventional television remote control device capable of communicating with a receiving device that can transmit information received from the remote control to the server. Additionally, a telephone may be used as a consumer input device 26, both as a touch-tone input device and to permit information to be conveyed orally, either to a voice recognition system located at the server or a live operator at a terminal connected to the server 20. The consumer display unit 24 and the consumer input device 26 may also be integrated into a single device, such as a personal computer. Other possible consumer input devices would include dedicated keyboards, joysticks, a mouse, a trackball, voice recognition, and touch screens, all as conventionally

implemented in existing computer technology or developments thereof.

The consumer display unit 24 and input device 26 may communicate with the server 20 by telephone line, by modem, by various forms of wired connection, including coaxial cable of the type typically used for provision of cable television services, by wireless communications using radio waves and by optical transmission, including transmission through fiber optic cabling. The same means may be used to connect the other components of the system to the server and to connect components of the system to each other if required. Although a single consumer display unit 24 and a single consumer input device 26 are shown in Fig. 1, a plurality of display units and input devices may be connected to the system.

The vendor data input device 28 may consist of a dedicated workstation for the input of vendor product data or may comprise a network of devices which have the capability of transmitting and receiving information to and from the server. While the minimum requirement is that the vendor input device be capable of transmitting and receiving alphanumeric data to and from the server, the vendor input device preferably has capability to generate product data in all of the forms available to be used on the system, namely, alphanumeric characters, sound, still photographs, still and animated graphics and motion video. Although a single vendor input device 28 is shown in Fig.

1, a plurality of vendor input devices may be connected to the system.

As shown in Fig. 2, in one embodiment, the vendor input device 28 is a dedicated workstation, comprising a digital computer 40 having a high resolution color display 42, a scanner 44 to input still pictures or photographs, a keyboard for alphanumeric character input 46, a video camera input 48 with the capability to store the information comprising motion video in digital form, a microphone 50 for directly inputting sound information such as voice or live music, and electronic inputs 52 for the input of analog and digital signals. Preferably, the dedicated vendor input workstation contains the capability to translate all of the information it receives in formats other than digital formats to digital form. The vendor input workstation preferably also has capability to generate animated graphics and to also receive files for graphics created elsewhere. Thus, a person using the vendor input dedicated workstation would be able to supply product information through photographs of a product, a motion video of the product, such as a model wearing a specific clothing product, combined with the ability for an announcer to record a oral voice-over, accompanied by music obtained from another source, all of which could be integrated into the product display information for each particular product. If a dedicated workstation is used, a person would be able to conveniently establish a form of service bureau to permit other persons to make products

available through the system, without the customers of the service bureau each being required to be a individual vendor on the system.

The vendor input device 28 may all contain the necessary information for accepting orders and confirming orders by consumers and arranging for shipping and credit approval information. Alternatively, as shown in Fig. 1, this function may be handled through a separate interface 30 to the vendor's order entry system 32. As discussed above, the vendor input device 28 may also contain storage which is capable of being accessed by the system, particularly with respect to product data from that particular vendor.

The interface device 30 has the capability to translate the requests for information generated by the server in the course of operation of the system into the forms understood by the various systems used by credit providers 34 for verification of transactions. The interface device 30 similarly converts the information received from these providers into the form used by the system. It should be noted that while the term "credit provider" is used herein as a general means of referring to an entity outside the system which may authorize payment for a requested order or transfer funds for payment of an order, such entities are not limited to conventional credit card companies. Other credit providers 34 could include debit card service providers as well as financial

institutions permitting the direct electronic transfer of funds from a consumer's account to a vendor's account.

The portion of the interface 30 used in connection with ordering and inventory information may be separate from the vendor input device 28. Primarily, this portion of the interface 30 is a means for translating product ordering information from the system into the form in which the vendor wishes to receive that information to permit the vendor to confirm inventory status, maintain proper inventory status for products on the system, and confirm orders by consumers. The interface 30 also will accept a purchase confirmation from a vendor in the form used by the vendor's order entry system 32 and translate the confirmation into the form used by the system. Although the interface 30 to a vendor's order entry system 32 would typically be an interface directly connected to a computer or computer network operated by the vendor, a vendor could confirm and update inventory status, receive ordering information and confirm orders through the use of live operators located at a terminal connected to the system through the interface, if such operators had the inventory and order data information of the vendor necessary to maintain the vendors' product information and respond to information requests from the system.

The security at the consumer level is primarily designed to permit the user flexibility in the use of the system while preventing unauthorized access and unauthorized product ordering. The consumer security 36

consists of two levels of security checks. On initial setup, each consumer is issued two codes, a user inquiry code and a order access code. The user inquiry code authorizes access to product information on the system. The authorization may be limited to access to product information on the system only through a specific display unit or a group of display units typically used by the consumer. The order access code is specific to a consumer and is required to be input and verified prior to permitting that consumer to access any credit information or other personal information relating to that specific consumer, such as account numbers, shipping addresses, or household inventory. It is also necessary to input the order access code to authorize purchases. If the user inquiry code is limited to authorizing access only through a specific display unit or units, the system may request further confirmation information to confirm the identity of the consumer if the combination of a user inquiry code and order access code received by the system indicates that the order access code is not being used at one of the authorized units.

Vendor security 38 controls access to modification or replacement of a particular vendor's product data that the vendor maintains on the system by use of passwords issued to vendors.

Vendor Input of Product Information

Turning to Fig. 3, the primary source of product information is from information input by vendors. All product information input by a vendor is identified as originating from that vendor. Vendor identity, as well as other information about the vendor such as location and address, are included in vendor identification information 60. For each product which the vendor wishes to add to the system, the vendor initially identifies the product category 62 and subcategories 64 into which the product should be classified. The available product categories and subcategories are established by the system operator. The vendor selects the appropriate category or categories in which the product will appear by applying rules established by the system operator. If the vendor has a product that does not appear to fall into any of the available categories or has a new product feature that is not previously identified by the system, the vendor submits a request to the system operator to establish a new category of product or new product feature. A new category or feature will be established only with the approval of the system operator. In addition to product category information 62, the product feature information 66 is required to be input. The product feature information is input into a structure of product features previously established by the system for products of that product category. In addition, the manufacturer has the option of providing feature explanations 68 or help information 70

with respect to each of the product features. Products may be goods, services, or a combination of goods and services.

The vendor also inputs information with respect to the product status information 72, namely, whether the product is to be designated as a "special offer" or as a "standard" product having no special product status (the default condition). A vendor may use a "special offer" designation to highlight slow moving or out-of-season products that may be offered at a reduced price, or products which are the subject of a temporary promotional offer. The vendor also inputs the initial inventory status 74 which reflects the availability of the product, namely, whether the product is available now, available at some point in the future, with an estimated availability date, or is not presently available. If the initial status of the product is "not available," the vendor has the responsibility to notify the system of a change in inventory status when the product does become available. Products which have a status of not available may not be accessed by a consumer while searching, browsing and ordering access.

Other information which may be input to the system includes the brand name of the product 76 (which may be the same as the vendor's name); the model number 78, if available; product parameters 80, such as dimensions, weight, size, color and style; the price of the product 82; shipping information 84, including the carrier types available and the estimated shipping and delivery times, if

applicable; the various costs of different methods of shipping and availability of different types of shipping. Product information may also include the payment terms 86 accepted by the vendor for a product, such as type of debit or credit cards accepted. In the case of products which include services, the product parameter information 80 input by the vendor may include the business hours and location of the service provider, the specialties of the service provider, and the geographic area served.

The vendor also enters the product display information 88. The product display 88 is essentially a short commercial for the product, of limited length, such as 15-30 seconds, which may include video, sound, graphics, text display, or other forms of display which the vendor chooses to use to advertise his product. The length of the product display 88 permitted by the system may vary for different product categories. For example, the length of the product display 88 for a men's shirt might be limited to 20 seconds, while the length of the product display 88 for a house might be limited to 3 minutes, to permit time to view all of the rooms in the house.

The content of a product display 88 would reflect the vendor's choice of the most effective means of communicating information about the product using the media available on the system. For example, a product display 88 for a women's blouse might show a high resolution still pictures of the blouse in all available colors, text indicating the vendor, brand name and price, motion video

of a model wearing the blouse, accompanied by a musical soundtrack and an announcer's voice extolling the virtues of the product.

A product display 88 for interior decorating services might include a still picture of the decorator, text indicating the name and service area of the decorator, motion video of past decorating projects, and a voiceover by the decorator explaining her design philosophy.

The product information also preferably includes a high resolution still color photograph 90 of the product, which may be used by the system in connection with the display of information about specific products in situations where the complete product display information is not used. Other types of information which may be provided by a vendor with respect to a specific product include dealer information 92 with respect to specific dealers or branches which stock the product, availability of product information 94 upon request by the consumer, and dealer contact information 96 indicating whether the consumer may request to have a dealer or product representative call the consumer or communicate with the consumer directly with respect to obtaining further information about the product.

Further, the vendor may choose to include complementary product information 98 suggesting related or complementary products that a consumer may wish to purchase or consider in conjunction with a purchase of the specific product. Some types of related and complementary products

may also be established by the system for particular product categories. A related product might be, for example, blank video recording tape if a video cassette recorder was purchased, or film which fits the camera if a still camera is purchased. A complementary product might be something which the consumer might wish to buy in conjunction with the product. An example of a complementary product would be, in the case of the product being a woman's blouse, accessories such as color-coordinated jewelry, or slacks or a skirt that would coordinate with that particular blouse. A vendor may specify related or complementary products either that are products of that vendor or, if products are available on the system, the products of another vendor.

After the vendor inputs product data for a specific product, the system will automatically designate the product as having "new product" status 100 for a fixed period of time after the product information was first added to the system. This designation permits consumers who are regular users of the system to conveniently limit searching and browsing to products which they have not previously seen.

Depending on the nature of the goods or services which comprise the particular product, not all of the types of product information described above may be applicable, but both product category information 62 and product feature information 66 are required in order to provide the consumer with the ability to search for the product.

Consumer Setup

The information necessary to allow a consumer to use the system may be provided through the system, or outside the system. The system provides a user inquiry code and an order access code to each consumer for initial setup of a consumer to use the system. The customer will provide the account numbers of credit cards, debit cards, or funds available for electronic transfer that the user will use to purchase products. The consumer may also provide default "ship to" addresses, such as the addresses of the user's own home and the addresses of businesses, friends and relatives. The setup information provided by the consumer is stored on the system and is associated with the order access code issued to that consumer. The user must submit both the inquiry code and order access code to purchase products. User A can purchase products through the system at User B's system provided the inquiry code at User B's system is activated by User B. User A then must input his or her own order access code to authorize product purchases. Changes and additions to consumer information after initial setup may be accomplished by selecting the consumer information mode.

Use by Consumer

The use of the system by a consumer may be divided into three main phases: the inquiry phase, the decision phase and the ordering phase. In the inquiry phase, the consumer has the ability to obtain information about

products and to search for specific products. In the decision phase, the consumer may compare different products, compare different vendors for the same products, and review saved product information. In the ordering phase, the consumer may order further information regarding a product, and order a product or a group of products from a variety of vendors.

With reference to Fig. 4, the consumer initially establishes communications 120 with the system server 20. If a consumer is using a personal computer as a display 24 and input 36 device, communication may be established via a modem or by selecting from a menu of available options if the computer is already connected to the server. In an interactive television environment, the consumer may establish communication by channel selection or menu selection, using a remote control or other input device. After communication is established, the consumer inputs a user input code 122 to authorize system access. After verification of the user input code, a screen of initial information is displayed 124, which may contain instructions on how to use the system, an opportunity to request a demonstration of system features, and an opportunity to request help in the form of further information regarding specific features. Preferably, the initial information also includes an opportunity for an experienced user to skip the display of information unneeded by that user and proceed to the next step.

Inquiry Phase

After the consumer has gained authorized access to the system, the inquiry phase begins by presenting the consumer with a the ability to select a mode 126. A consumer may choose the browse mode 128 to browse through product information, as though perusing the pages of a catalog, or may choose the search mode 130 to search for particular products. Other modes include the consumer information mode 132, for the creation, display and editing of consumer information, household inventory mode 134 for the creation, display and editing of household inventory information and the selection assistance mode 136 for requesting assistance in selection of complementary products or gifts. In any mode selected while in the inquiry phase, the consumer has the option of selecting and saving product information for later use. If the consumer has previously used the system and has saved product information, he may choose the review mode 138 at any point to review the saved information and proceed to the decision phase. At any time in while in the inquiry phase, the consumer also has the option to request help with respect to system operation, change modes, or terminate use of the system.

Browse Mode

If the browse mode 128 is chosen, the consumer is initially presented with an opportunity to select limitations 140 on the products through which he wishes to browse. Although the scope of the products may be limited

in many ways, in one embodiment, as shown in Fig. 6, the consumer is offered the opportunity to limit the scope of the products to be browsed to those products which have been designated as "new products" 210 or to those products which have been designated as "special offerings" 212. The consumer is also offered the opportunity to limit the scope of the products by limitations on vendors 214, brands 216 and product category 218. In response to an indication by the consumer that he wishes to limit the scope of products by vendor 214, a list of all vendors is displayed 220, with the consumer given the opportunity to identify specific vendors to be included or excluded from the scope of products to be browsed 222. Similarly, in response to an indication by the consumer that he wishes to limit the scope of products by brand 216, a list of all brands is displayed 224, with the consumer given the opportunity to identify specific brands to be included or excluded from the scope of products to be browsed 226. In the same manner, in response to an indication by the consumer that he wishes to limit the scope of products by category 218, a list of all categories is displayed 228, with the consumer given the opportunity to identify specific categories to be included or excluded from the scope of products to be browsed 230. If a consumer has previously established personal profile information or has access to profile information for another person, the consumer may also indicate that he wishes to limit the scope of products to be browsed to those products which are consistent with

his personal profile information 232 or the profile information of such other person 234.

A counter display may be used to inform the consumer of the number of products which are included within the presently identified scope of the products to be browsed. If no limitations are identified, the counter display indicates the number of products in the system which are available for browsing. As each limitation is identified, the counter display would indicate a decreased number of products which are within all the identified limitations.

In offering the consumer the opportunity to limit the scope of products to be browsed, the process of identifying limitations may be made faster if the limitations which have already been identified are used to limit the amount of information displayed in connection with subsequently selected limitations. For example, if the consumer has first chosen to limit the scope of the products to be browsed to those products which have been designated as "new products" and subsequently indicates that he wishes to limit the scope of the products by vendor, rather than displaying a list of all vendors, only those vendors which offer products designated as "new products" would be displayed. For each type of limitation identified after the initial limitation, the list displayed would be limited to those elements, if any, which comply with all of the previously identified limitations.

The process of identifying limitations on the scope of products to be browsed may also be made faster if the

displayed lists are organized into a hierarchy of classifications. For example, rather than immediately listing all product categories in the system in response to an indication that the consumer wishes to limit the scope of products to be browsed, the first display may list only general categories, such as "goods" and "services." If limitation to "goods" is selected, the system would next display broad classifications of goods, such as "transportation," "electronics," "sports equipment," and the like. For each broad classification selected, the consumer would have an opportunity to further limit the scope of products to be browsed by display of narrower classifications in the selected classification, until the narrowest classification of product category has been reached. Alternatively, the system may provide for direct input of the product classification or category name by the consumer, to enable an experienced user to bypass the necessity to review listings. While the example described above uses product category information, the same technique is applicable to the other limitations. The initially displayed list of vendors may be, for example, classified by geographic location, while brands might be classified by alphabetical groups, such as all brands beginning with the letter A. The type and number of classifications that may be advantageously employed for any given type of limitation are a function of the number of items in the complete list and the amount of useful information available with respect to each item.

Returning to Fig. 4, after the consumer has identified any limitations which he wishes to impose on the products to be browsed, the browse cycle is initiated and the product display information 88 for each of the products within the selected limitations is displayed 142. The product display information 88 is the commercial for the product that has been input by the vendor of that product. After the completion of a product display, the product display information of another product will be shown, the cycle repeating until all of the product display information for products within the scope of the products to be browsed has been displayed, or the consumer interrupts the browse cycle by selecting one of the available options. While in the browse mode, the consumer has numerous options to control the display of information. The consumer has the option to pause any display, go back to a previous display, restart the browse cycle, skip to a future display, or terminate the display. The consumer also has the option to change the scope of products by modifying the identified limitations and the option to save the limitations in effect for future use. Whenever product display information is displayed while in browse mode, the consumer has the options of selecting the product to be saved to the summary screen for later reference or use, and verifying the present inventory status of that particular product.

Search Mode

If the search mode 130 is chosen, the consumer is initially presented with an opportunity to select limitations 144 on the products through which he wishes to search. Although the scope of the products may be limited in many ways, in one embodiment the opportunity to limit the product scope is implemented in a manner similar to the limitation on products to be browsed as described above. The consumer is offered the opportunity to limit the scope of the products to be searched to those products which have been designated as "new products" or to those products which have been designated as "special offerings." The consumer is also offered the opportunity to limit the scope of the products to be searched by identifying limitations on vendors, brands and category, or further limiting searching to a search by model number.

In response to an indication by the consumer that he wishes to limit the scope of products by vendor, a list of all vendors is displayed, with the consumer given the opportunity to identify specific vendors to be included or excluded from the scope of products to be searched. Similarly, in response to an indication by the consumer that he wishes to limit the scope of products by brand, a list of all brands is displayed, with the consumer given the opportunity to identify specific brands to be included or excluded from the scope of products to be searched. In the same manner, in response to an indication by the consumer that he wishes to limit the scope of products by category, a list of all categories is displayed, with the

consumer given the opportunity to identify specific categories to be included or excluded from the scope of products to be searched. If a consumer has previously established personal profile information or has access to profile information for another person, the consumer may also indicate that he wishes to limit the scope of products to be searched to those products which are consistent with his personal profile information or the profile information of such other person.

A counter display may be used to inform the consumer of the number of products which are included within the presently identified scope of the products to be searched. If no limitations are identified, the counter display indicates the number of products in the system which are available for searching. As each limitation is identified, the counter display would indicate a decreased number of products which are within all the identified limitations.

In offering the consumer the opportunity to limit the scope of products to be searched, the process of identifying limitations may be made faster if the limitations which have already been identified are used to limit the amount of information displayed in connection with subsequently selected limitations. For example, if the consumer has first chosen to limit the scope of the products to be searched to those products which have been designated as "new products" and subsequently indicates that he wishes to limit the scope of the products by vendor, rather than displaying a list of all vendors, only

those vendors which offer products designated as "new products" would be displayed. For each type of limitation identified after the initial limitation, the list displayed would be limited to those elements, if any, which comply with all of the previously identified limitations.

The process of identifying limitations on the scope of products to be searched may also be made faster if the displayed lists are organized into a hierarchy of classifications. For example, rather than immediately listing all product categories in the system in response to an indication that the consumer wishes to limit the scope of products to be searched, the first display may list only general categories, such as "goods" and "services." If limitation to "goods" is selected, the system would next display broad classifications of goods, such as "transportation," "electronics," "sports equipment," and the like. For each broad classification selected, the consumer would have an opportunity to further limit the scope of products to be searched by display of narrower classifications in the selected classification, until the narrowest classification of product category has been reached. Alternatively, the system may provide for direct input of the product classification or category name by the consumer, to enable an experienced user to bypass the necessity to review listings. While the example described above uses product category information, the same technique is applicable to the other limitations. The initially displayed list of vendors may be, for example, classified

by geographic location, while brands might be classified by alphabetical groups, such as all brands beginning with the letter A. The type and number of classifications that may be advantageously employed for any given type of limitation are a function of the number of items in the complete list and the amount of useful information available with respect to each item.

In response to an indication that the consumer wishes to search by model number 146, the consumer is given the option of inputting a model number or listing available model numbers. If a listing of available model numbers is requested, a listing is displayed in alphanumeric order and the consumer may select a model number from the list. After the model number has been selected, either by inputting the model number or selecting from a list, the product display information for that product may be displayed to verify that the model number is for the desired product, and the consumer is given the option of saving the product to the summary screen for later reference or use. The scope of a model number search may also be limited by identifying limitations in vendors, brands, or categories before choosing to search by model number, in which case the model numbers searched will be limited to those which fall within the identified limitations.

If a model number search has not been chosen, after the consumer has identified any limitations which he wishes to impose on the products to be searched, a list of the

product categories which fall within the limitations previously identified will be displayed, and an opportunity to select the first category or group of categories for searching is provided to begin the feature search 148. Although several of the narrowest product categories may be included within the scope of the identified limitations, a complete product feature search can only be performed for products within a specific product category. If several product categories are to be searched simultaneously, the feature search will necessarily be limited to the product features which are common to all of the selected product categories.

Turning to Fig. 7, after selection of the product category(s), the consumer is given the option of using a pre-prioritized feature search 240 or a personal priority feature search 242. The pre-prioritized feature search displays the features of products in the selected product category in an order which has been predetermined to reflect the relative importance of the features to an average consumer's decision to purchase a product in this category. If multiple categories have been selected, a priority order is derived from the combination of the relative priority of those features which are common to all selected categories 244. If use of a pre-prioritized feature search is selected, the most important feature is displayed, followed by a list of options under that feature 246. In the case of the product category "televisions," the most important feature may be "screen size." The

options displayed under the screen size feature might include:

01. 13 inch

02. 19-20 inch

03. 25-26 inch

04. 27 inch

05. 31 inch

06. 35 inch

07. 40 inch

08. projection to 5 feet

09. projection to 6 feet

10. projection over 6 feet

The consumer chooses one of the options from the list 248. If the consumer wishes to continue the search 250, the consumer is next presented with a display of the next most important feature 246, followed by a list of options under that feature. The consumer then chooses one of the options from that list 248. The consumer may continue to identify features and select options until the available feature information has been exhausted. At this point, the product display information for the product or products which satisfy the search criteria are displayed 150. Alternatively, the consumer may choose to display the product display information for the products which meet the search criteria at any time prior to the exhaustion of all the feature information 252. Also, if a consumer is uncertain with respect to the value or uses of a particular feature or option, he can request further information or

help with respect to that option or feature. The use of the structured search function allows consumers to efficiently navigate though a large amount of data relating to available products to find products which meet their needs, with the ability to learn more about specific product features and options if desired.

This priority of features is initially determined by system operator or developer and preferably reflects the experience of salespeople skilled in the product category and historical data as to consumer preferences derived from records of sales in retail establishments, through catalog sales, and the like. An example of the priority of a feature search for the product category "televisions" might be as follows:

1. Screen size
2. Price
3. Table/Console
4. Remote Control
5. Stereo
6. Input/Output jacks
7. S-VHS
8. Finish
9. Cabinet style
10. Picture-in-picture
11. Type of remote control
12. Number of channels
13. Surround sound
14. Speakers

However, the priority order may be varied by the system operator to take into account changing market conditions, or changing emphasis in product marketing strategies of vendors. The priority order may also be changed in response to trends identified in data resulting from the use of the system itself. For example, in the product category of televisions, if a large number of consumers who choose to use a personal priority feature search consistently identify the existence or lack of the "Stereo" feature as a feature is which more important than the presence of a remote control, the pre-prioritized search order could be modified to reflect this shift in emphasis. While the search order could be modified manually, the priority order could also be automatically modified to reflect system use that exceeded predetermined threshold levels. Using the simple example given above, the priority order could be automatically changed if, for example, "Stereo" was rated more important than "Remote" by over 50% of the consumers who chose to use a personal priority search during a three month time period.

If a personal priority feature search is selected 242, the features of the products in the product category are displayed 254 and the consumer identifies the most important feature to that consumer 256. After identifying the most important feature, a list of options under that feature is displayed 258 and the consumer chooses one of the options 260. The consumer is next presented with an option to identify the next most important feature 262, or

to use the pre-prioritized feature search 264. The consumer may continue to identify features and select options until the available feature information has been exhausted. At this point, the product display information for the product or products which satisfy the search criteria are displayed 150. Alternatively, the consumer may choose to display the product display information for the products which meet the search criteria at any time prior to the exhaustion of all the feature information 266. If the consumer chooses to end the personal priority search 264, he may continue searching by the use of the pre-prioritized search, from which the features which have already been identified in the personal priority search have been deleted.

Regardless of the search method used, a counter may be used to give the consumer a preview of the results of the search. A display of a counter may be used to inform the consumer of the number of products which satisfy the terms of the search at any point. Also, if the counter indicates that less than a preset number of products satisfy the terms of the search, a still picture display of each of such products may be simultaneously displayed to the consumer. Upon viewing the still picture displays, the consumer is given the option of continuing the feature search, selecting one or more of the displayed products for further display of its associated product display information, or selecting one or more displayed products to be saved to the summary screen.

Whenever product display information is displayed as the result of a search, the consumer has the option of selecting the product to be saved to the summary screen and verifying the inventory status of a particular product. If multiple product displays are displayed as the result of a search, the display cycle will operate much like a browse display: after the product display information for a product has been shown, the product display information of another product will be shown, the cycle repeating until all of the product display information for products resulting from the search has been displayed, or the consumer interrupts the display cycle by selecting one of the available options. While in the display cycle, the consumer has numerous options to control the display of information, including the option to pause any display, go back to a previous display, restart the display cycle, skip to a future display, or terminate the display. The consumer also has the option to change the scope of products by modifying the identified search limitations, the option to save the limitations in effect for future use and the option to save the search parameters, such as a personal priority search, for future use.

Consumer Information Mode

The consumer information mode 132 permits the consumer to store, retrieve, display and edit consumer information. Referring to Fig. 8, if the consumer information mode is selected 132, the order access code must be input 270

before accessing consumer information, due to the private nature of the information. After the access code has been input, the categories of consumer information are displayed. Although the consumer information may be categorized in various ways, in one embodiment the categories displayed are consumer identification, credit information, personal profile, recipient profiles, budget information, and past purchases. The consumer may select any category 272. At any time while in the consumer information mode, the consumer may change to a different consumer information category.

The consumer identification category includes information relating to the consumer's display units, shipping addresses and system passwords, such as the inquiry code and the order access code. In addition, the consumer may identify which other users, if any, may have access to his consumer information, such as his personal profile information. If this category is selected, the information may be displayed, new information input, existing information modified or deleted.

The credit information category 276 includes information relating to the consumer's credit card account, debit card accounts, and accounts containing funds available for electronic transfer. If this category is selected, the information may be displayed, new information input, and existing information modified or deleted. In addition, the consumer may select an account and transmit a request to the credit provider for information with

respect to the account, such as the current balance of the account or the balance of available credit. The consumer may also select an account and obtain from the system a report of past purchases through the system which involve that account.

The personal profile category 278 contains information regarding the characteristics and tastes of each consumer which can be used to assist a consumer in product selection. This information may be input by a consumer, derived from product purchase information or derived from household inventory information maintained on the system by a consumer. The information may also be used in generating demographic information relating to users of the system.

A consumer may create a personal profile which includes information about that consumer's characteristics and preferences. This information may encompass any of the types of information which are used by the system as product features, categories, or classifications. For example, a consumer's personal profile information could contain information regarding the consumer's height, weight, age, clothing sizes, and shoe size. A consumer that has this type of information in his personal profile could choose to use the information as an additional limitation when searching or browsing for products. In the case of the dimension and size information described above, a search for a shirt could be limited to those shirts which fit the parameters of the personal profile, in addition to the other limitations available. Consumer preference

information may also form part of the personal profile, and be similarly used as a searching or browsing limitation. Consumer preference information could include, for example, a preference that men's dress shirts be limited to those which are 100 percent cotton, with button down collars. If a consumer has personal profile information that relates to a desired category of product, the consumer may reduce searching and browsing time by selecting to use the personal profile information as a limitation on the product information that will subsequently be displayed.

A consumer's personal profile information may include characteristics and preferences relating to services as well as goods. For example, a personal profile might contain the information that preferred service providers are those which are open on weekends, provide free estimates, and are located within a six mile radius of the consumer's home.

Personal profile information may be directly input by a consumer or may be derived from information relating to product purchases made using the system. For each product that is purchased using the system, the consumer will necessarily have made a number of decisions with respect to the features of the product. For each purchase, a consumer may be prompted by the system to allow the consumer to choose which, if any, of the product feature information selected in connection with that purchase he wishes to include in his personal profile for products in that category.

In another embodiment, the system may review information relating to a series of purchases by a consumer to determine if a pattern of product features is present. The consumer could then be prompted by the system to determine whether those features should be included in that consumer's personal profile. For example, upon each purchase in a product category, the system may review all of that consumer's past purchases in the category and determine if a feature or group of features are consistently represented. If the product category is men's dress shirts, the consumer is male, the consumer has made multiple purchases of men's dress shirts, and most of the men's dress shirts shipped to the consumer's home address are long sleeved and 100 percent cotton, the system may ask the consumer whether either "long sleeves" and "100 percent cotton" should be included in the consumer's personal profile.

Consumer profile information may also be used to personalize the display of product information. If a consumer's personal profile contains the information that the consumer is female, 5 feet 2 inches in height, weighs 115 pounds, has blue eyes, brown hair and an olive complexion, the display of product information for a dress could be modified as necessary to show a model which matches the consumer's personal characteristics wearing a dress of the appropriate size. The display of product information might also be personalized by superimposition of the consumer's actual features on a display of product

information, if a suitable photograph of the consumer is included in the consumer's profile information.

Another form of profile information that would be useful in connection with selection of a variety of products would be the body type of the consumer. While each consumer may have a particular body shape, with sufficient information a consumer may be able to identify one of a number of body types, each having parameters established by the system, as that which most closely matches the consumer's actual body type. For example, a male consumer may include information in his personal profile relating to his height, weight, hat size, neck size, chest measurement, waist measurement, hip measurement, inseam, sleeve length, and shoe size. In addition, the consumer may select from a display of the available body types which fit the other parameters, the body type which most closely matches his own. This information may then be used as a reference for displays of product information in which it may be advantageous to display the presence of a person.

Use of a defined number of body types, each having known parameters established by the system, would permit vendors to provide product information in connection with a person of a body type similar to that of the consumer. A vendor may include product information derived from use of a separate model having the parameters of each defined body type. Alternatively, the system could calculate the modifications necessary to alter a display of one body type

to other body types and modify the display accordingly.

This form of profile information may be used to personalize the product displays to show a body type as similar to that of the consumer as possible, in connection with a variety of products, in addition to the clothing and accessories. A body type may be displayed in connection with chairs or other furniture to display the fit of the chair, or in connection with the interior of a car to determine if the controls are within easy reach for the consumer. This information may also be used by service providers to determine, for example, the proper design criteria for the height of counters and cabinets in an architectural plan. If sufficiently detailed information is present in a consumer's profile, the consumer could request items from vendors which are tailored to that consumer's particular information, such as custom clothing. In such a case, the relevant consumer profile information could be sent to the vendor through the system, permitting the vendor to program automated equipment to manufacture the article to order and to the consumer's particular requirements.

The recipient profiles category contains information regarding the characteristics and tastes of persons other than the consumer which can be used to assist a consumer in selection of products for the other person, such as the recipient of a gift. For example, a person may have profile information regarding a spouse and children in his

recipient profile information. In addition to the methods of creating or deriving profile information discussed in connection with personal profiles, a consumer's recipient profile information may include the personal profile of another person, if that person has established a personal profile on the system and authorized the consumer to have access to that person's profile information. A consumer that has recipient profile information may choose to use the information as an additional limitation when searching or browsing for products that are intended to be purchased for a specific recipient.

The budget information category 282 contains information relating to the consumer's finances which the consumer may use to establish and monitor a budget for purchases. The consumer may establish a limit on purchases, such as a limit on all purchases, or a limit on purchases in a specific product category during a specific period of time. In a preferred embodiment, the consumer has access to calculating functions to assist in the computation of budget information, including amortization, depreciation, and payment schedules. A consumer may also request information regarding past purchases and information regarding available credit. In one embodiment, limits established for product purchases may trigger a notification to a consumer who attempts to order products which exceed the budget limitation. In another embodiment, limits established for product purchases may restrict a

consumer from ordering products which exceed the budget limitation until the budget limitation is modified.

The past purchases category 284 contains information about the product previously purchased using the system. If this category is selected, the consumer may browse and search through this limited scope of products.

Household Inventory Mode

If the household inventory mode 134 is selected, as shown in Fig. 9, the order access code must be input 290 to authorize access to the household inventory information. After the order access code has been input, the consumer may choose to display his inventory 292, add an item his inventory 294, delete an item from his inventory 296 or replace a specific item. At any time while in household inventory mode, the consumer may select the form of the display of inventory information. In one embodiment, for each product the consumer may choose to display a brief product description, a still image of the product, the acquisition date, the purchase price, and the current value of the product, any combination of the foregoing, or the full product display information for each product. The current value may be calculated by the system through application of depreciation rules, or may have been input by the consumer. At any time during the display of product information the consumer has the option to pause any display, go back to a previous product, change the form of the display, skip to a future product, or terminate the

display. The consumer also has the option to request, at any time during the display, the display of the total number of products displayed, the sum of the purchase prices of the products displayed and the sum of the present value of the products displayed.

If the consumer chooses to display his inventory 292, a list of product categories represented in his inventory is displayed 300. After the consumer selects the categories to be displayed from the list 302, the product information in the consumer's household inventory for products in the selected categories is displayed 304. The consumer also has the option of requesting a printed report of the inventory information.

If the consumer chooses to add an item to his inventory 294, the consumer has the option of adding an item from the list of his past purchases 306 or adding a new item 308. If the consumer chooses to add a past purchase item, a list of past purchases is displayed 310 and the consumer selects the items he wishes to add to inventory 312. If the consumer chooses to add a new item, the consumer is requested to specify an approximate date when the product was new 314. If the date entered by the consumer is within the parameters of the currently available product database, the current database will be subsequently used. If not, the historical database of products that are no longer available will be subsequently used, and if no date is specified, all databases will be used. Next, the consumer searches 316, using the same

methods as in the search mode, to attempt to find the product which he wishes to add. If the product is found, the consumer selects the product to be included in inventory 318. If the product is not found, the consumer may choose to create a product 320 to be entered which includes the product features selected during the search as well as descriptive information input by the consumer.

For each item selected to be added, the consumer has the option of selecting a depreciation method to be applied to the product and the option to specify a present value for the product.

If the consumer chooses to delete an item from his inventory 296, a list of product categories represented in his inventory is displayed 322. After the consumer selects the category of the product to be deleted from the list 324, the product information in the consumer's household inventory for products in the selected category is displayed 326. The consumer then selects from the display the items to be deleted from his inventory 328.

If the consumer chooses to replace a specific item with a currently available item 298, as in the case of a replacement for an item that has been lost, stolen or destroyed, the consumer first indicates whether the product to be replaced was previously included in the consumer's household inventory information 330. If the product was previously included in the household inventory information, a list of product categories represented in his inventory is displayed 332. The consumer then selects the category

to be displayed from the list 334, and the product information in the consumer's household inventory for products in the selected categories is displayed and the consumer selects the item to be replaced 336. If the selected product is presently available, the product display information will be displayed for verification and the consumer may select and save the product for ordering.

If the product to be replaced was not previously included in the household inventory information 338, the consumer is requested to specify an approximate date when the product was new 340. If the date entered by the consumer is within the parameters of the currently available product database, the current database will be subsequently used. If not, the historical database of products that are no longer available will be subsequently used, and if no date is specified, all databases will be used.

Next, the consumer searches 342, using the same methods as in the search mode, to attempt to find the product which he wishes to replace 344. If the product is found, the consumer selects the product for replacement. If the selected product is presently available, the product display information will be displayed for verification and the consumer may select and save the product for ordering.

If the product which is to be replaced is not found, or the product is found and selected but is not presently available, the consumer may request the system to identify

the presently available product or products which most closely matches the features or product selected while searching 346. If the system identifies any such products, the product information for each product may be displayed and the consumer may select and save a replacement product from the closest equivalent available products.

Selection Assistance Mode

If the selection assistance mode 136 is selected, the consumer has a choice of assistance with selection of products which complement or related to another product 152, or assistance with selection of a gift for another person 154. Turning to Fig. 10, if the consumer chooses assistance with the selection of a complementary or related product, the consumer must first identify the initial product or products for which complementary or related products are to be selected 350. The initial products may be chosen from a list of products which have previously been selected and saved, past purchases, or products in the consumer's household inventory. As each initial product is selected the product information is displayed, and the consumer is given an opportunity to continue the display of the product information while selecting complementary and related products or additional initial products. After the consumer has indicated that selection of initial products is complete, the categories of products which are related or complementary to the selected initial products are

displayed 352. The consumer may then browse 128 or search 130 for products within the displayed categories.

For example, a consumer may select a blue men's suit as the initial product. Categories of complementary and related products might include men's dress shoes, men's dress shirts, and men's ties in red, blue, and yellow. If the consumer desired a complementary tie, he could browse through the available ties while simultaneously viewing the display of the product information for the suit selected as the initial product. If a complementary tie was selected, it too could be displayed while a consumer browsed or searched for a complementary shirt. If multiple products are selected, as each product is selected the number of complementary or related products decreases to reflect the additional limitations imposed by the selection of the additional product.

Complementary products exist as both goods and services. For example, if a house is selected as the initial product, complementary products might include furniture moving and storage services available in that geographic location, a lawn care service, a maid service, furniture and redecorating services and supplies.

If a consumer chooses assistance with gift selection 154, the user is first prompted to identify the intended recipient of the gift 354. If the consumer has profile information for the identified recipient, or authorized access to the recipient's own personal profile information, the profile information is used to limit the scope of

potential gifts 356. If the consumer does not have profile information for the recipient 358, or the profile information is not complete, the consumer will be requested to provide basic information about the recipient. In one embodiment, the consumer is prompted to select, from a displayed list of options, the sex of the recipient, the age range of the recipient, the height range of the recipient, the weight range of the recipient and the known interests of the recipient.

After the basic recipient information has been established, either through reference to profile information or by input from the consumer, the consumer is requested to specify the relationship of the consumer to the recipient 360. In one embodiment, the consumer may select the relationship 362 from a list which includes spouse, parent, child, friend, co-worker, employer, employee and prospect.

The consumer is also requested to specify the occasion for the gift 364. In one embodiment, the consumer may select the occasion 366 from a list which includes birthday, anniversary, graduation, Christmas, Hanukkah, promotion, and retirement.

The consumer is also requested to enter a desired price range 368 for the gift and in one embodiment may select a range 370 from a displayed list.

After the consumer has indicated that all desired parameters have been specified, the categories of products of suggested gifts which comply the selected parameters are

displayed 380, and the consumer may browse 128 or search 130 for products. In addition to the limitation on product category imposed by the selected parameters, the products within each category which are available to be browsed or searched would be limited to those products which comply with the selected limitations. For example, if the intended recipient is an adult female and the specified occasion is Christmas, with a price range of $60 - $100, the display of suggested gifts of clothing would be limited to women's clothing that was available for delivery before Christmas and which is priced between $60 and $100.

Decision Phase

With reference to Fig. 5, after a product or product has been selected and saved, the consumer may choose the review mode 138 to display a summary screen 160 which displays product information for the saved products. The consumer may verify the inventory status of a product 162, compare different products 164 and cause the system to highlight the differences in the product features 166, or compare multiple vendors for the same product 168 and highlight differences 170 to determine the best price and terms. The consumer may also display product information for each saved product 172, delete products from the summary 174, identify products or information he wishes to order 176, or change to the browse or search modes to view additional product information 178. The consumer may also identify which of the products to be ordered 176, if any,

are to be added to the consumer's household inventory information.

Ordering Phase

If the consumer wishes to order information relating to a product, after the products have been identified, the consumer may choose to order information 180 and select the form of information desired from more product information 182, a request to have a dealer for the product call or contact the consumer 184, or request information about the dealers for the product in a specific location 186, such as the closest dealer to the consumer's home. After selection the information orders are transmitted to the vendor for fulfillment.

Once the consumer has identified the product or products he wishes to order, which may include products from a variety of vendors, the consumer may choose to order products 188 and the order access code is input 156. The consumer's information is displayed 190 and the user selects the method of payment from the credit provider accounts 192 that are in his consumer information file as well as the appropriate addresses for shipment of the products 194. The system calculates the total amount of the requested order and transmits to the selected credit provider 34 the information relating to that total amount and a request for approval for the total amount 196. The system receives from the credit provider 34, through the interface 30, information indicating that the credit is

approved 198 and/or that the proposed purchase would exceed the limit on credit or funds available for use 200. If the purchase amount is approved, the system then requests the credit provider to transmit approval for each purchase to each vendor which is supplying that product to the purchaser 202. If the method of payment selected is electronic transfer of funds, the system verifies the available balance of funds, and provides means for any input of any additional code which may be necessary to authorize direct transfer of funds. If sufficient credit is not available, the available credit is displayed 204 and the user can return to the summary screen 206 in order to modify his order, choose an alternate credit provider or exit with no action taken.

If the order is approved by the selected credit provider the order information is transmitted to each vendor for confirmation 202. Each vendor provides invoicing and shipping information confirmation to the consumer's display 204. Displayed invoices must be approved by the consumer for final release to the vendor for actual order processing and shipment 206. Inventory and purchase information is sent to and obtained from the appropriate vendors and credit providers 34 through interfaces 30 with the system which translate between the data formats and protocols used by the various systems.

Usage and Billing Information

The system stores and maintains usage information, including the following:

A. Number of viewings of each product display

B. Number of sales of each product

C. Dollar value of sales of each product

D. Number of information orders

E. Number of requests for dealers to call

The information in these categories may be used to determine the charges and billing for use of the system by vendors whose products and services are available on the system. Additional revenue can come from a variety of reporting options, which would provide system usage data organized in a variety of ways upon request.

Examples of the type of reports available would include information as to what was viewed and what was sold, which can be valuable to the vendor in respect to future production and purchasing decisions as well as being valuable in respect to pricing policies. Demographic information can be extracted from the system which can identify trends of purchase and interest in purchasing based upon viewings of product files by consumers having certain characteristics. Usage information could also be used to develop customized interactive advertisements which can be directed to specified demographic groupings. Interactive advertisements could be directed to zip code groupings, income level groupings, family groupings or previous category purchase groupings.

What is claimed is:

1. A system for interactive product selection and purchasing comprising:

a digital computer;

display means, for displaying information to a consumer;

storage means, for storage of information, said storage means including a first portion for storing information relating to consumers, a second portion for storing information relating to vendors and a third portion for storing information relating to products;

consumer input means, for communicating information from a consumer to the system;

vendor input means, for communicating information from a vendor to the system;

interface means, for communicating information to and from the system, said interface means including a first portion for communicating information between the system and credit providers and a second portion for communicating information between the system and vendors;

security means, for controlling access to the system, said security means including a first portion for restricting access to said information relating to consumers and a second portion for restricting access to said information relating to products;

search means, operating within said digital computer, for receiving product selection information from said consumer input means and causing portions of said product

information to be displayed on said display means in response to such input; and

ordering means, operating within said digital computer, for receiving ordering information from said consumer input means.

2. A system, as claimed in Claim 1, wherein: products includes goods and services.

3. A system, as claimed in Claim 1, wherein:

said information relating to consumers includes consumer information for at least a first particular consumer, said consumer information including at least one of consumer identity information, consumer shipping location information, consumer credit provider information, consumer personal profile information, recipient profile information, consumer budget information, and information regarding past purchases of the consumer.

4. A system, as claimed in Claim 1, wherein:

said information relating to products includes product information for a plurality of products, the product information for each such product including at least one of product category information, product manufacturer information, product brand name information, product price information, product feature information, product availability information, product vendor information, product status information, product model number information and complementary product information.

5. A system, as claimed in Claim 1, wherein:

said information relating to products includes information capable of being displayed as at least one of text, sound, still graphics, animated graphics, still video and motion video.

6. A system, as claimed in Claim 1, wherein:

said display means includes means for display of information in the form of at least one of text, sound, still graphics, animated graphics, still video and motion video.

7. A system, as claimed in Claim 1, wherein:

said vendor input means includes means for input of information capable of being displayed as at least one of text, sound, still graphics, animated graphics, still video and motion video.

8. A system, as claimed in Claim 1, wherein:

said first portion of said security means includes means for requiring the input of a specific order access code for each particular consumer prior to permitting access to such consumer's consumer information and said second portion of said security means includes means for requiring the input of an inquiry code prior to permitting access to said information relating to products.

9. A system, as claimed in Claim 1, wherein:

said search means includes means for consumers to identify desired products by input of data using said consumer input means in response to display of a plurality of information screens, where at least one of such

information screens permits the consumer to choose to display at least one of product information relating to products having a given brand name, product information relating to products in a product category and product information relating to products of a given vendor.

10. A system, as claimed in Claim 1, wherein:

said search means includes means for consumers to identify desired products in response to display of a plurality of information screens, where at least some of such information screens provide product feature information in a preselected order.

11. A system, as claimed in Claim 10, wherein:

said search means includes means to modify said preselected order in response to input of data by consumers.

12. A system, as claimed in Claim 1, wherein:

said search means includes means for consumers to identify desired products in response to display of a plurality of information screens, where at least some of such information screens provide product feature information in an order selected by the consumer.

13. A system, as claimed in Claim 1, wherein:

said search means includes means for consumers to save identified product information.

14. A system, as claimed in Claim 1, wherein:

said first portion of the interface means includes means for receiving credit approval information relating to

a purchase by a consumer from at least a first credit provider.

15. A system, as claimed in Claim 1, wherein:

said second portion of the interface means includes means for receiving product availability information from at least a first vendor.

16. A system, as claimed in Claim 1, wherein:

said information relating to products includes information regarding completed product purchases.

17. A system, as claimed in Claim 1, wherein:

said information relating to products includes information regarding the amount of the use of the information relating to at least a first particular product.

18. A system, as claimed in Claim 1, further comprising:

report generation means, for organizing information stored in said storage means and generating at least a first report containing such information in response to a request communicated to the system.

19. A system, as claimed in Claim 1, further comprising:

browse means, for selecting and viewing information relating to a plurality of products.

20. A system, as claimed in Claim 1, further comprising:

complementary product selection assistance means, for providing information to a consumer to permit the consumer to identify products which complement another product.

21. A system, as claimed in Claim 1, further comprising:

gift selection assistance means, for providing information to a consumer to permit the consumer to identify products that are suitable gifts for another person.

22. A system, as claimed in Claim 1, further comprising:

household inventory means, for establishing and maintaining an inventory comprising product information relating to products in a consumer's household.

23. A system, as claimed in Claim 1, further comprising:

comparison means, for comparison of first selected product information with at least second selected product information.

24. A method for assisting a consumer in choosing products from those available to be purchased using an interactive system, comprising the steps of:

(a) displaying available types of limitations on the display of product information, including product category limitations, vendor limitations, brand limitations and product status limitations.

(b) selecting limitations on product information to be displayed;

(c) displaying available types of search procedures for searching product information, including a predetermined priority product feature search procedure and a procedure using a product feature search priority identified by a consumer;

(d) selecting a search procedure type;

(e) displaying product feature information in the order of priority associated with the selected search procedure type;

(f) selecting limitations on the display of product feature information, and

(g) displaying product information which is within the scope of previously selected limitations.

25. A method, as claimed in Claim 24, further including:

saving information selected by the consumer.

26. A method, as claimed in Claim 24, further including:

providing comparison means;

comparing product information relating to a first product to product information relating to at least a second product; and

displaying the differences in the product information of said products.

27. A method, as claimed in Claim 24, further including:

displaying information permitting a consumer to choose a further action with respect to a particular product, said further actions including at least one of: ordering product, requesting dealer call, requesting information regarding nearest dealer, and requesting more product information.

28. A method, as claimed in Claim 24, further including:

displaying information permitting a consumer to select at least one product to be ordered;

displaying shipping information permitting a consumer to select a means for shipping said product;

providing calculation means;

calculating the total cost of the purchase and shipping of said product;

29. A method, as claimed in Claim 24, further including:

inputting an order access code to request the display of method of payment information;

providing verification means;

verifying the order access code to authorize access to consumer information of a consumer;

displaying information permitting a consumer to select a method of payment from the methods of payment available to such consumer;

selection of a method of payment; and

approval of the selected method of payment.

30. A method, as claimed in Claim 29, wherein:

said approval step includes transmission of the amount of the requested order to a credit provider for approval.

31. A method, as claimed in Claim 29, wherein:

said approval step includes transmission of the amount of the requested order to a credit provider for approval, displaying a notice to the consumer if insufficient credit is available from said credit provider, providing means for selection of an alternate credit provider and providing means for changing the amount of the requested order.

32. A method, as claimed in Claim 29, further comprising:

transmission of product order information relating to a particular product to a vendor;

display of information indicating acceptance of an order for said particular product by vendor.

33. A method, as claimed in Claim 24, wherein:

said product category information includes a goods category and a services category.

34. A method, as claimed in Claim 24, wherein:

said product status information includes information which identifies products as one of a standard product, a new product or a special offer product.

35. A system for interactive selection and purchasing of products including both goods and services comprising:

a digital computer;

display means, for displaying information to a consumer, said display means including means for display of information in the form of text, sound, still graphics, animated graphics, still video and motion video;

storage means, for storage of digital information, said storage means including a first portion for storing information relating to consumers, including consumer information for at least a first particular consumer, said consumer information including at least one of consumer identity information, consumer shipping location information, consumer credit provider information, consumer personal profile information, recipient profile information, consumer budget information, and information regarding past purchases of the consumer, a second portion for storing information relating to vendors and a third portion for storing information relating to a plurality of products, including, for each such product, product information including at least some of product category information, product manufacturer information, product brand name information, product price information, product feature information, product availability information, product vendor information, product status information, product model number information and complementary product information, and said information relating to products includes information capable of being displayed as at least one of text, sound, still graphics, animated graphics, still video and motion video;

consumer input means, for communicating information from a consumer to the system;

vendor input means, for communicating information from a vendor to the system, said vendor input means including means for input of information capable of being displayed as at least one of text, sound, still graphics, animated graphics, still video and motion video;

interface means, for communicating information to and from the system, said interface means including a first portion for communicating information between the system and credit providers and a second portion for communicating information between the system and vendors;

security means, for controlling access to the system, said security means including a first portion for restricting access to said information relating to consumers, said first portion of said security means including means for requiring the input of a specific order access code for each particular consumer prior to permitting access to such consumer's consumer information and a second portion for restricting access to said information relating to products, said second portion of said security means including means for requiring the input of an inquiry code prior to permitting access to said information relating to products;

search means, operating within said digital computer, for receiving product selection information from said consumer input means and causing portions of said product information to be displayed on said display means in

response to such input, said search means including means for consumers to identify desired products in response to display of a plurality of information screens, where at least some of such information screens provide product feature information in a preselected order and said search means further includes means for consumers to identify desired products in response to display of a plurality of information screens, where at least some of such information screens provide product feature information in an order selected by the consumer, where at least one of said information screens permits the consumer to choose to display at least one of product information relating to products having a given brand name, product information relating to products in a product category and product information relating to products of a given vendor;

ordering means, operating within said digital computer, for receiving ordering information from said consumer input means;

report generation means, for organizing information stored in said storage means and generating at least a first report containing such information in response to a request communicated to the system;

browse means, for selecting and viewing information relating to a plurality of products.

complementary product selection assistance means, for providing information to a consumer to permit the consumer to identify products which complement another product;

gift selection assistance means, for providing information to a consumer to permit the consumer to identify products that are suitable gifts for another person;

household inventory means, for establishing and maintaining an inventory comprising product information relating to products in a consumer's household; and

comparison means, for comparison of first selected product information with at least second selected product information.

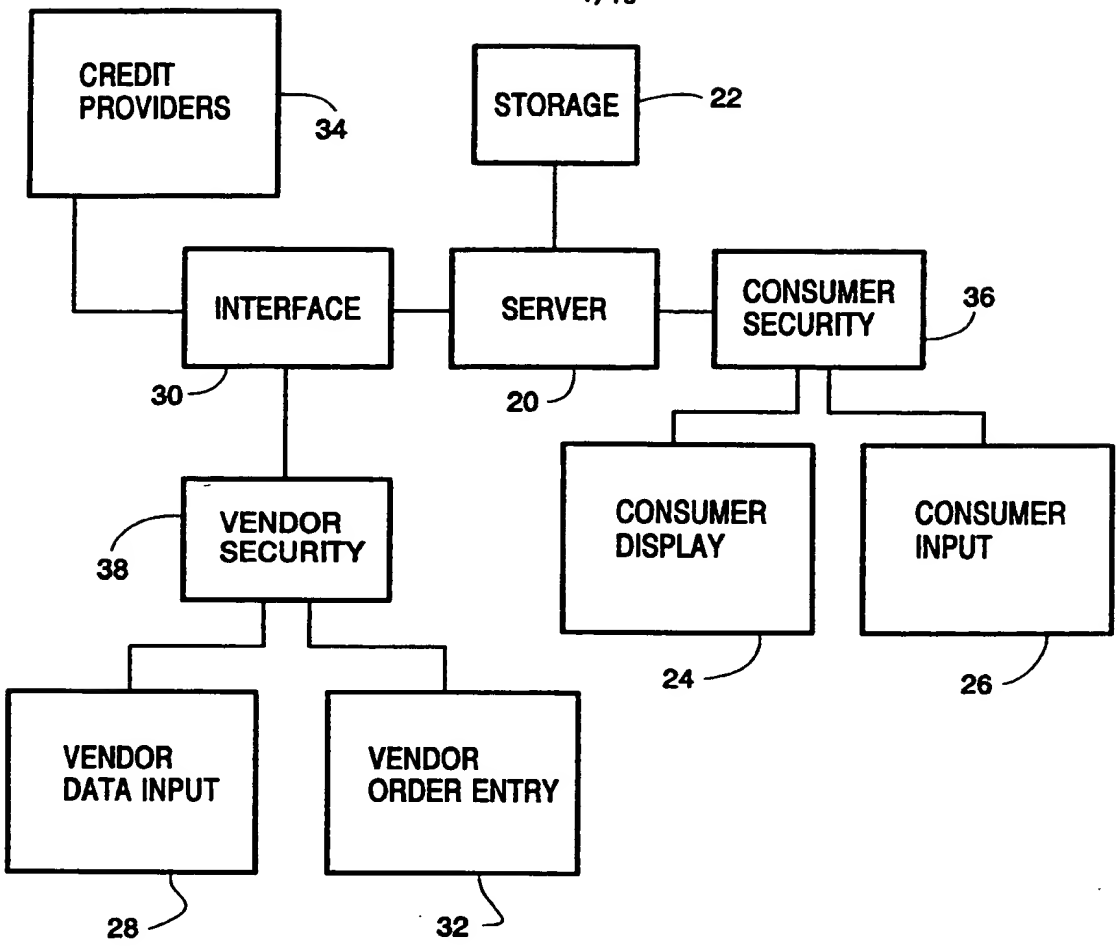

CREDIT PROVIDERS
34
STORAGE
22
INTERFACE
SERVER
CONSUMER SECURITY
36
30
20
VENDOR SECURITY
38
CONSUMER DISPLAY
CONSUMER INPUT
24
26
VENDOR DATA INPUT
VENDOR ORDER ENTRY
28
32

FIG. 1

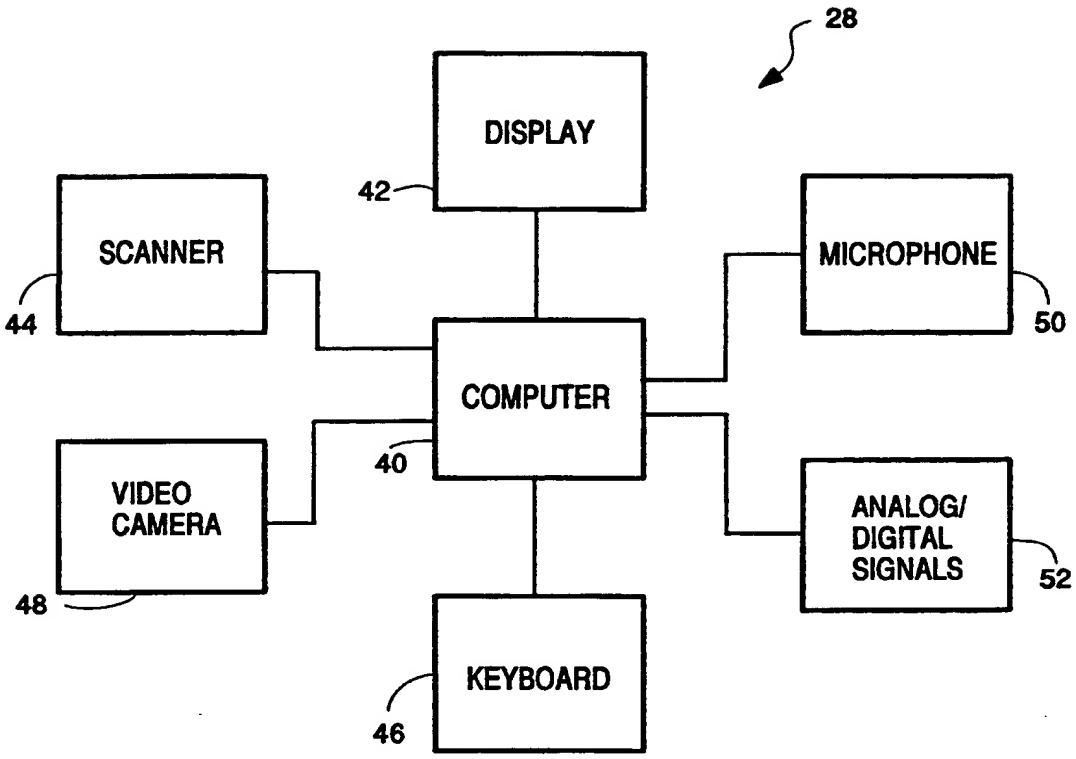

28
DISPLAY
42
SCANNER
44
MICROPHONE
50
COMPUTER
40
VIDEO CAMERA
48
ANALOG/ DIGITAL SIGNALS
52
KEYBOARD
46

FIG. 2

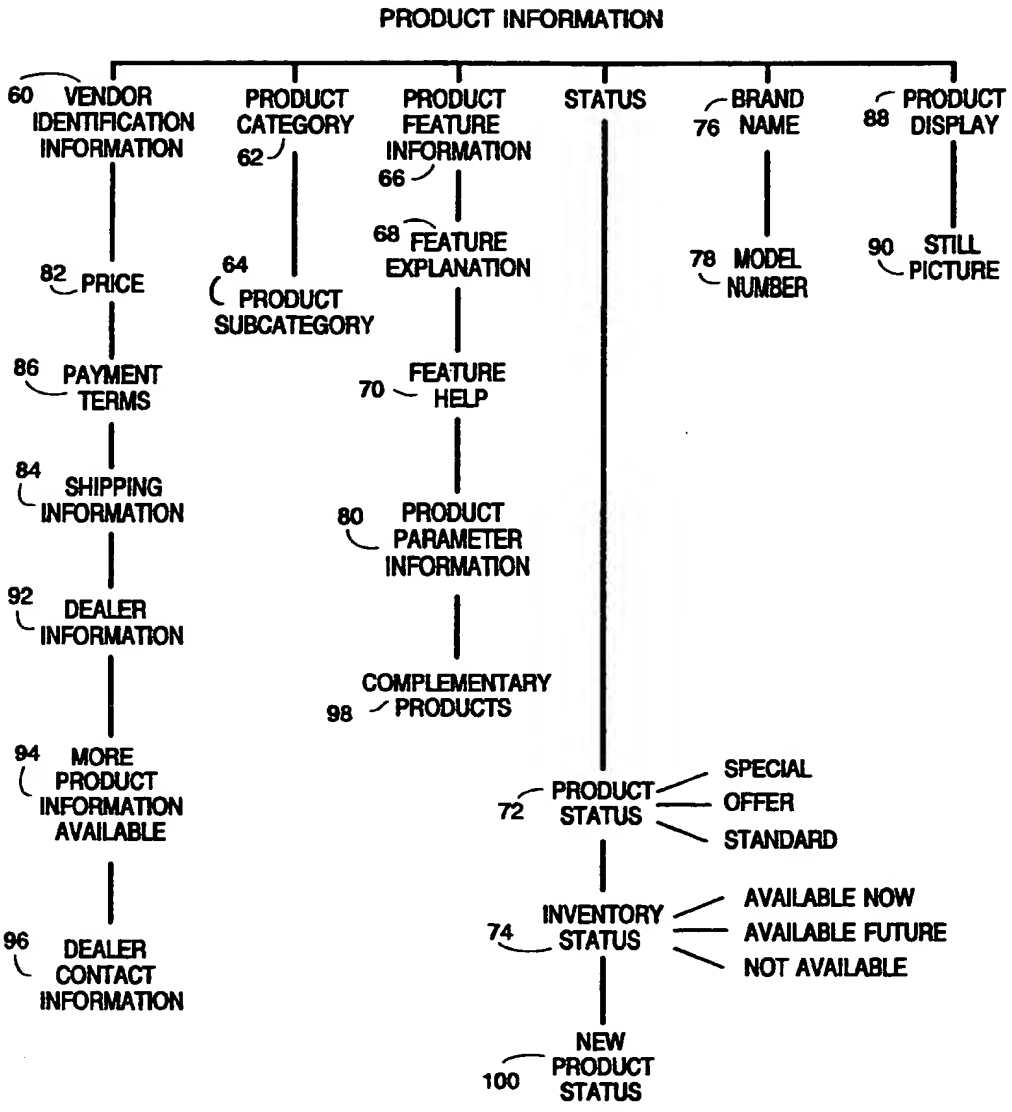
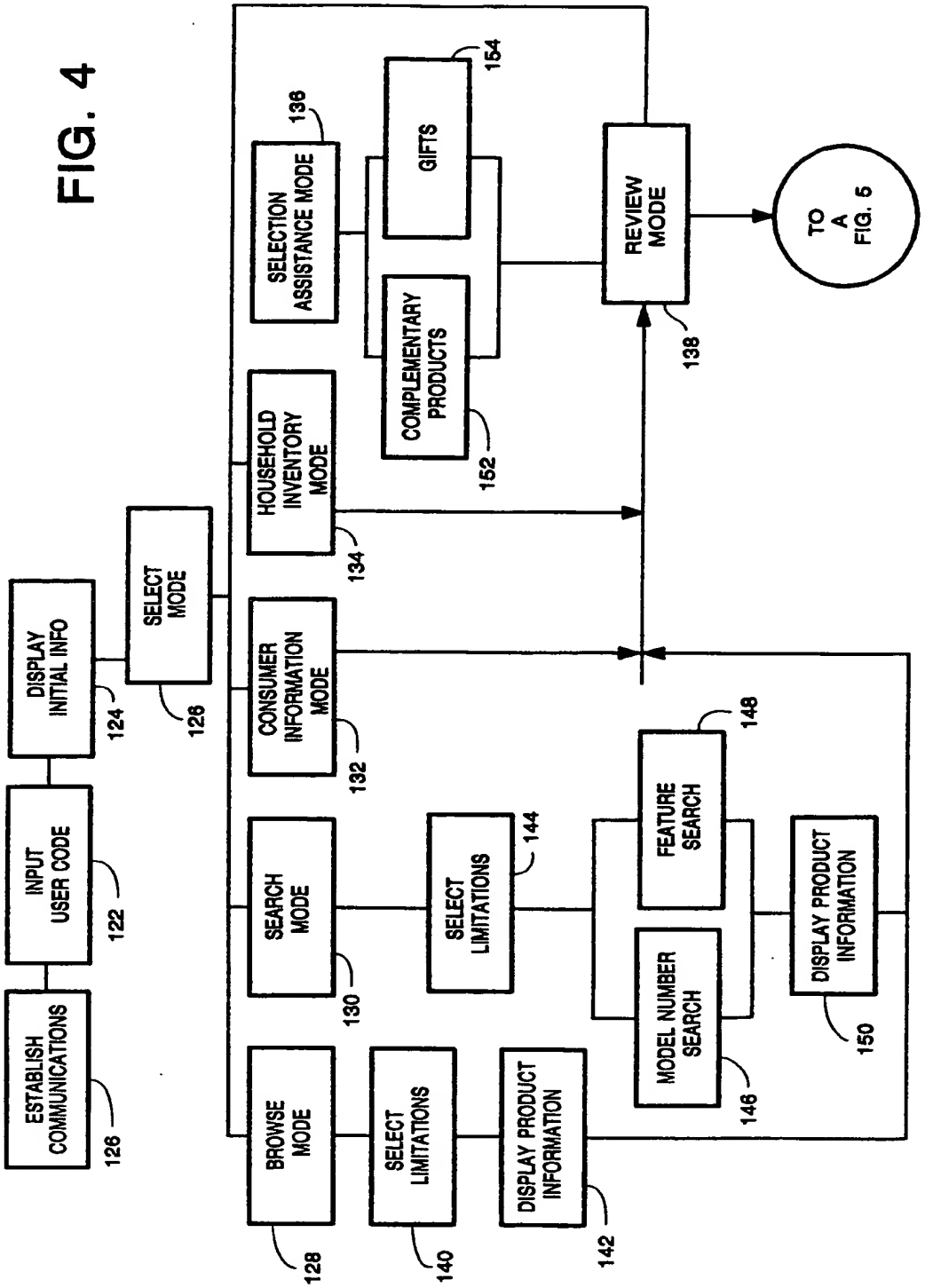

PRODUCT INFORMATION
60 VENDOR IDENTIFICATION INFORMATION
PRODUCT CATEGORY 62
PRODUCT FEATURE INFORMATION 66
STATUS
76 BRAND NAME
88 PRODUCT DISPLAY
82 PRICE
64 PRODUCT SUBCATEGORY
68 FEATURE EXPLANATION
78 MODEL NUMBER
90 STILL PICTURE
86 PAYMENT TERMS
70 FEATURE HELP
84 SHIPPING INFORMATION
80 PRODUCT PARAMETER INFORMATION
92 DEALER INFORMATION
COMPLEMENTARY 98 PRODUCTS
94 MORE PRODUCT INFORMATION AVAILABLE
72 PRODUCT STATUS
SPECIAL
OFFER
STANDARD
INVENTORY 74 STATUS
AVAILABLE NOW
AVAILABLE FUTURE
NOT AVAILABLE
96 DEALER CONTACT INFORMATION
NEW 100 PRODUCT STATUS

FIG. 3

FIG. 4


ESTABLISH COMMUNICATIONS
126
INPUT USER CODE
122
DISPLAY INITIAL INFO
124
SELECT MODE
128
BROWSE MODE
128
SELECT LIMITATIONS
140
DISPLAY PRODUCT INFORMATION
142
SEARCH MODE
130
SELECT LIMITATIONS
144
MODEL NUMBER SEARCH
146
FEATURE SEARCH
148
DISPLAY PRODUCT INFORMATION
150
CONSUMER INFORMATION MODE
132
HOUSEHOLD INVENTORY MODE
134
SELECTION ASSISTANCE MODE
136
COMPLEMENTARY PRODUCTS
152
GIFTS
154
REVIEW MODE
138
TO A FIG. 6

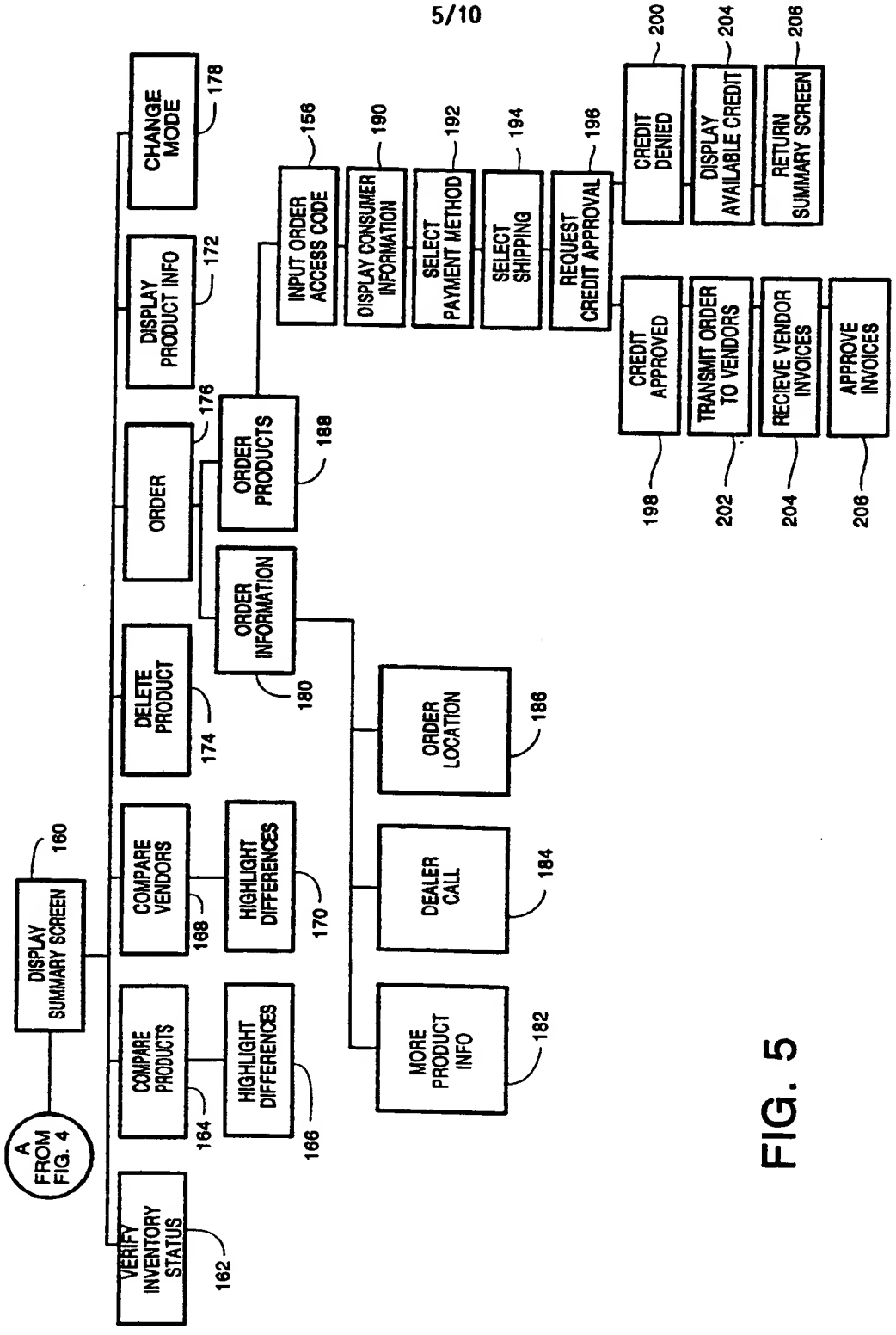

A FROM FIG. 4
DISPLAY SUMMARY SCREEN
160
VERIFY INVENTORY STATUS
162
COMPARE PRODUCTS
164
HIGHLIGHT DIFFERENCES
166
COMPARE VENDORS
168
HIGHLIGHT DIFFERENCES
170
DELETE PRODUCT
174
ORDER
176
DISPLAY PRODUCT INFO
172
CHANGE MODE
178
ORDER INFORMATION
180
MORE PRODUCT INFO
182
DEALER CALL
184
ORDER LOCATION
186
ORDER PRODUCTS
188
INPUT ORDER ACCESS CODE
156
DISPLAY CONSUMER INFORMATION
190
SELECT PAYMENT METHOD
192
SELECT SHIPPING
194
REQUEST CREDIT APPROVAL
196
CREDIT APPROVED
198
CREDIT DENIED
200
TRANSMIT ORDER TO VENDORS
202
DISPLAY AVAILABLE CREDIT
204
RECIEVE VENDOR INVOICES
204
RETURN SUMMARY SCREEN
206
APPROVE INVOICES
208

FIG. 5

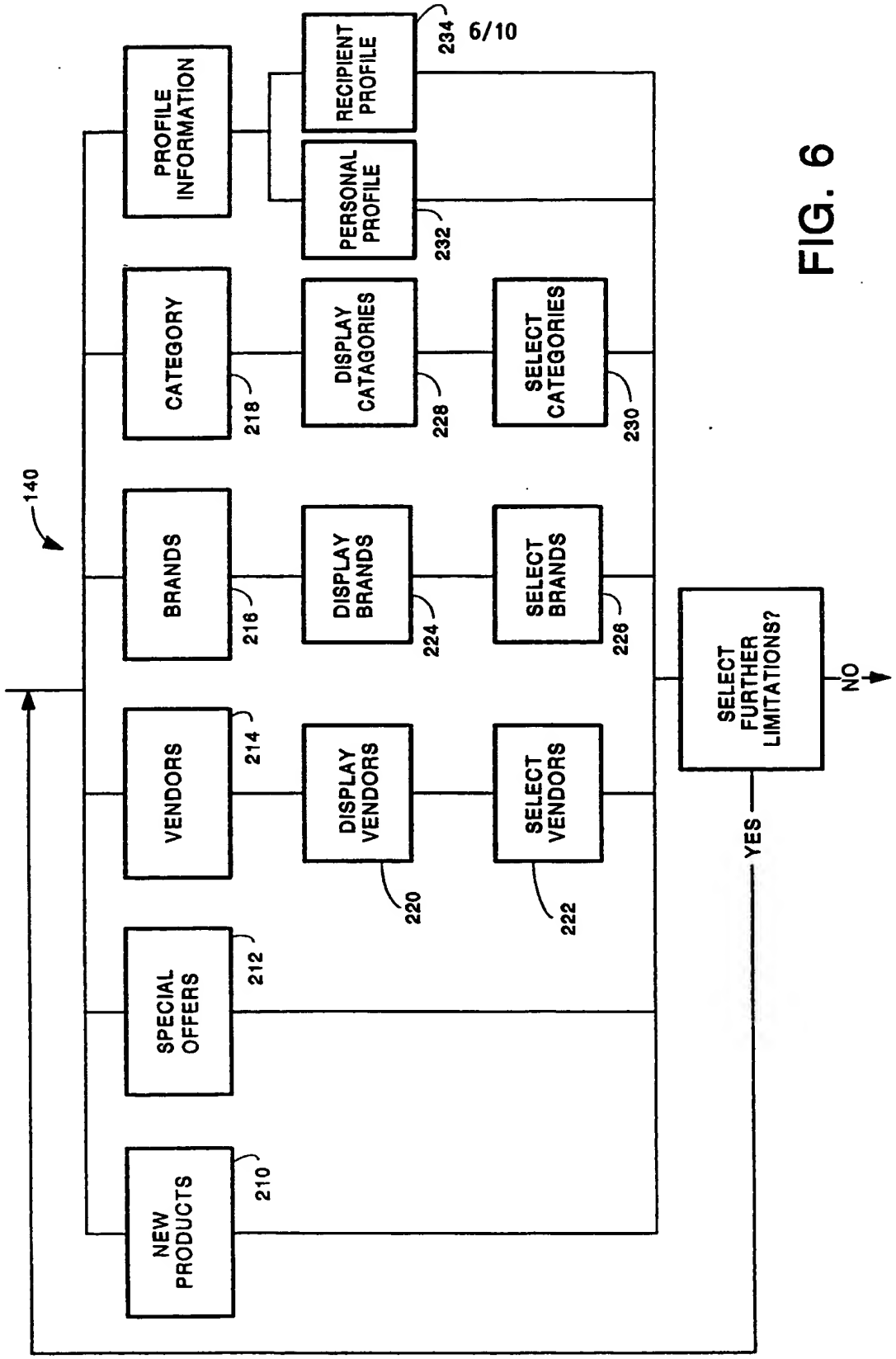

140
PROFILE INFORMATION
RECIPIENT PROFILE
234
PERSONAL PROFILE
232
CATEGORY
218
DISPLAY CATAGORIES
228
SELECT CATEGORIES
230
BRANDS
216
DISPLAY BRANDS
224
SELECT BRANDS
226
VENDORS
214
DISPLAY VENDORS
220
SELECT VENDORS
222
SPECIAL OFFERS
212
NEW PRODUCTS
210
SELECT FURTHER LIMITATIONS?
NO
YES

FIG. 6

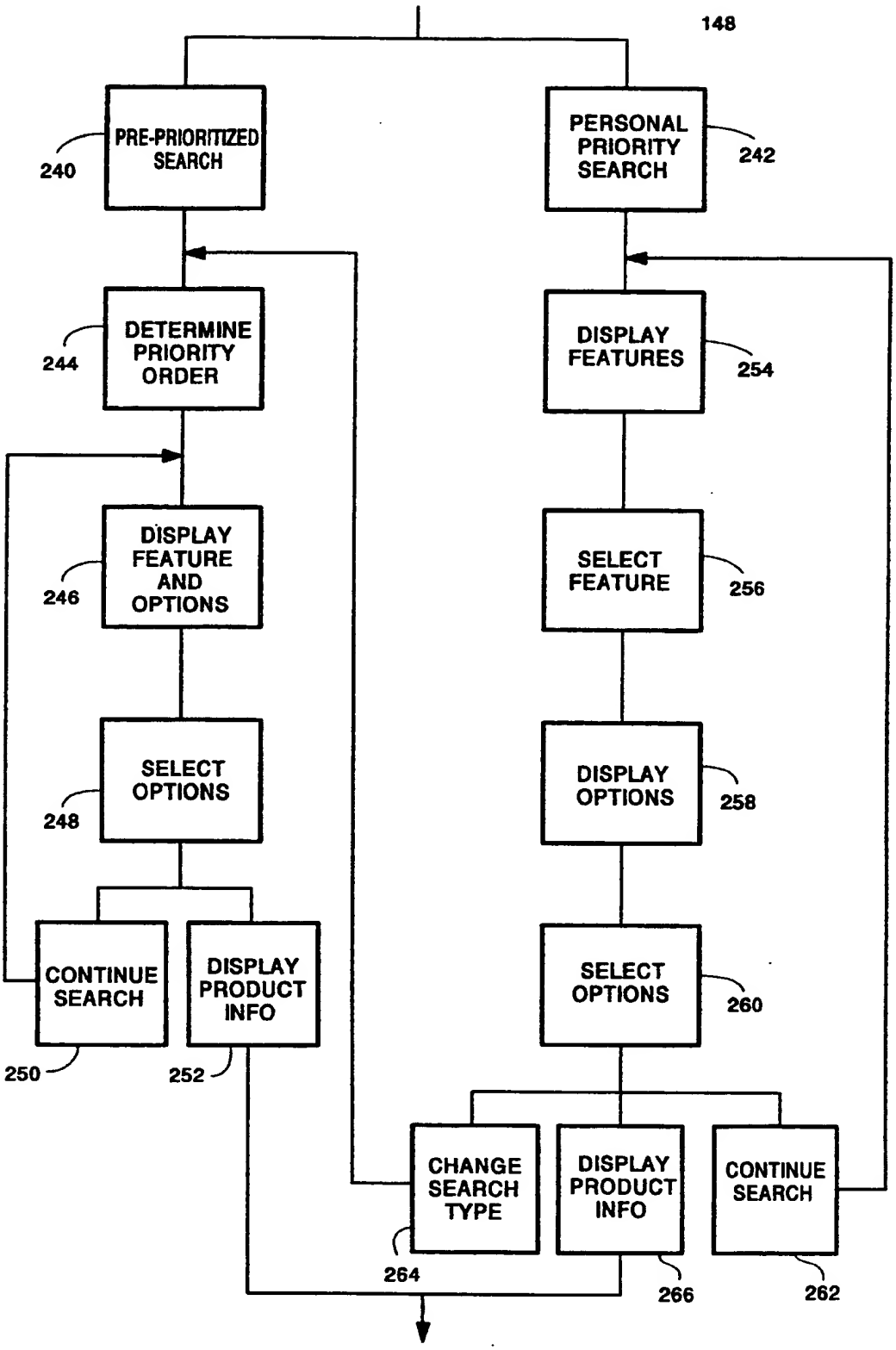
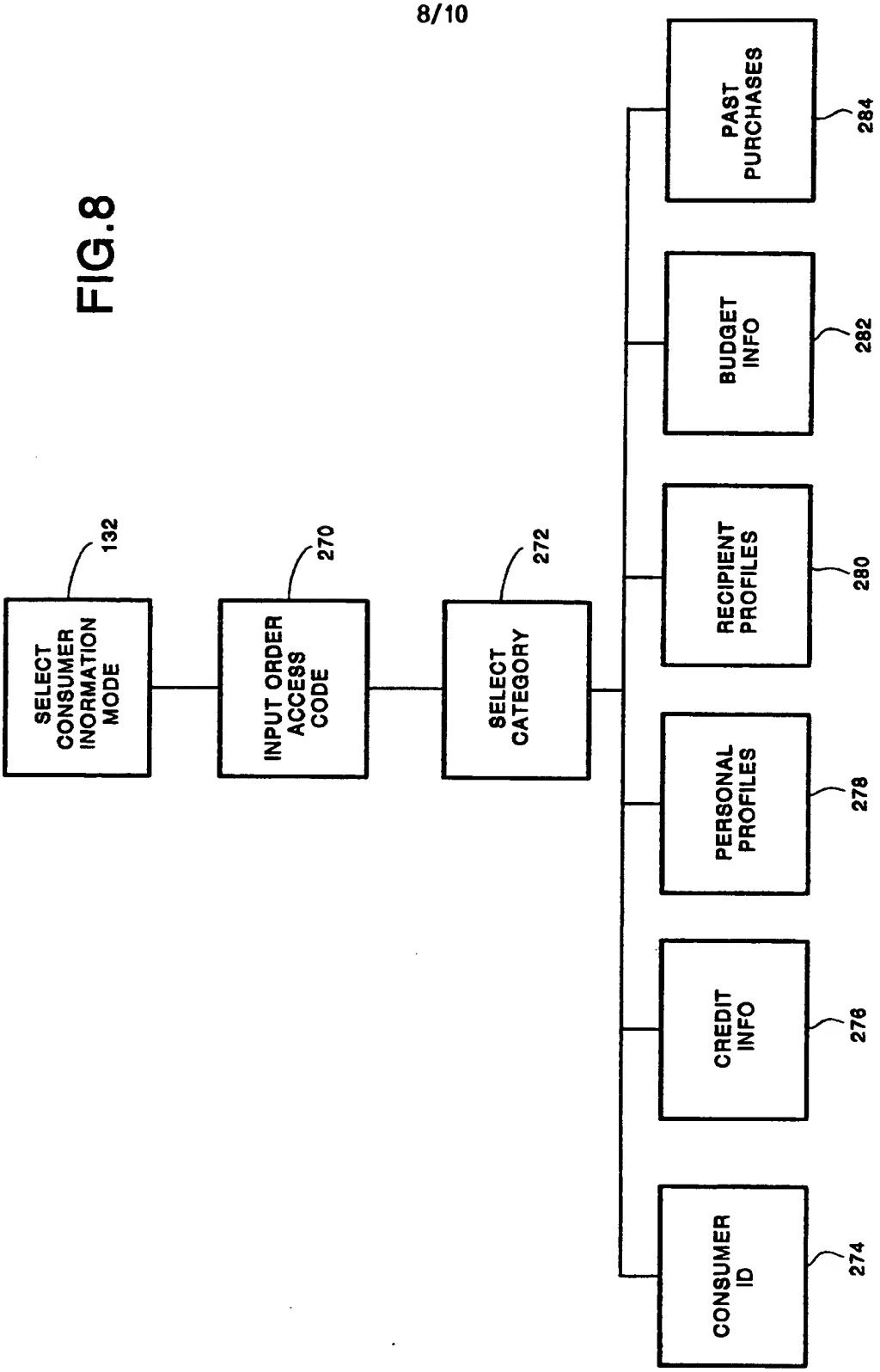

148
PRE-PRIORITIZED SEARCH
240
PERSONAL PRIORITY SEARCH
242
DETERMINE PRIORITY ORDER
244
DISPLAY FEATURES
254
DISPLAY FEATURE AND OPTIONS
246
SELECT FEATURE
256
SELECT OPTIONS
248
DISPLAY OPTIONS
258
CONTINUE SEARCH
250
DISPLAY PRODUCT INFO
252
SELECT OPTIONS
260
CHANGE SEARCH TYPE
264
DISPLAY PRODUCT INFO
266
CONTINUE SEARCH
262

FIG. 7

FIG.8


SELECT CONSUMER INORMATION MODE
132
INPUT ORDER ACCESS CODE
270
SELECT CATEGORY
272
PAST PURCHASES
284
BUDGET INFO
282
RECIPIENT PROFILES
280
PERSONAL PROFILES
278
CREDIT INFO
276
CONSUMER ID
274

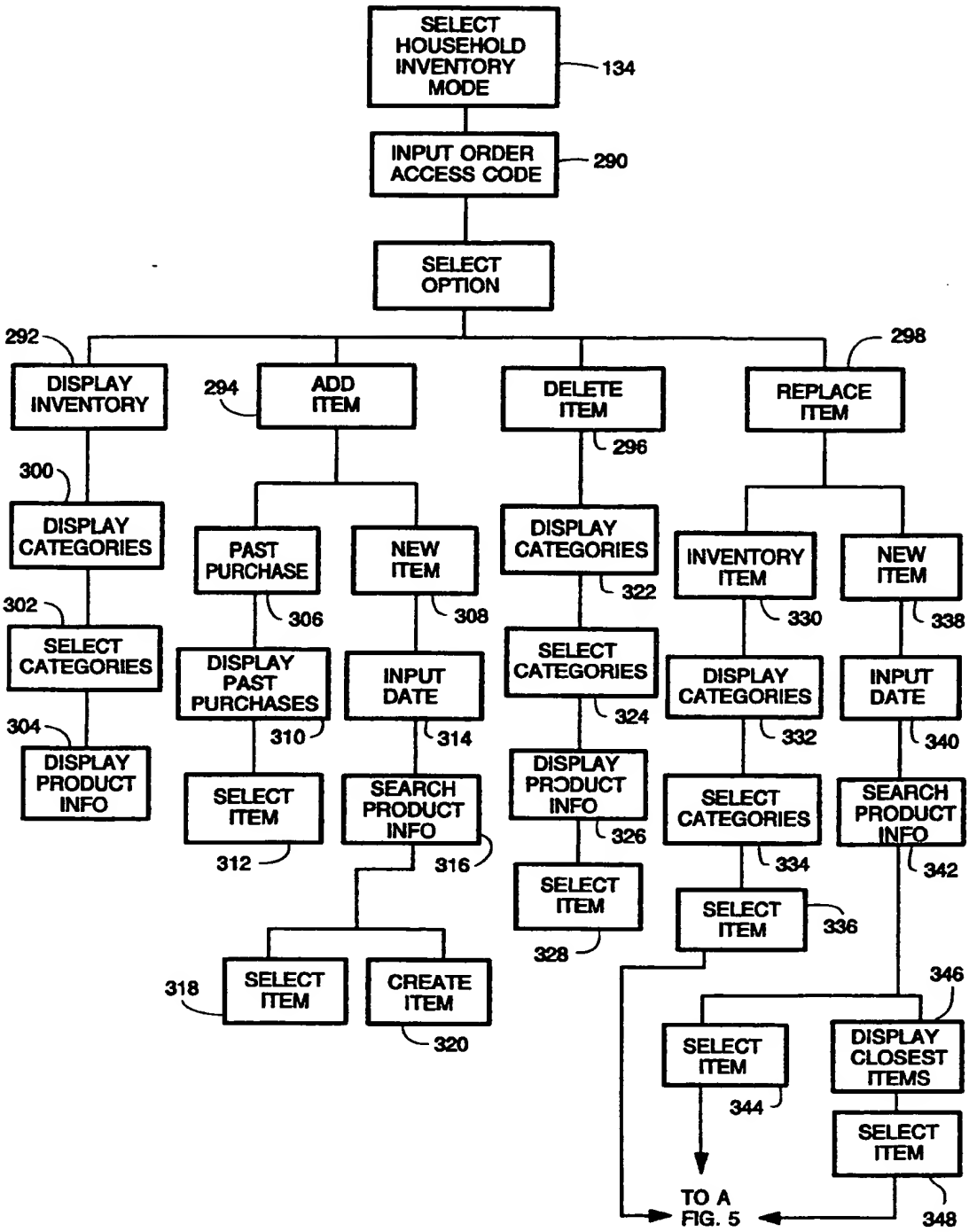

SELECT HOUSEHOLD INVENTORY MODE
134
INPUT ORDER ACCESS CODE
290
SELECT OPTION
292
DISPLAY INVENTORY
294
ADD ITEM
DELETE ITEM
296
298
REPLACE ITEM
300
DISPLAY CATEGORIES
PAST PURCHASE
306
NEW ITEM
308
DISPLAY CATEGORIES
322
INVENTORY ITEM
330
NEW ITEM
338
302
SELECT CATEGORIES
DISPLAY PAST PURCHASES
310
INPUT DATE
314
SELECT CATEGORIES
324
DISPLAY CATEGORIES
332
INPUT DATE
340
304
DISPLAY PRODUCT INFO
SELECT ITEM
312
SEARCH PRODUCT INFO
316
DISPLAY PRODUCT INFO
326
SELECT CATEGORIES
334
SEARCH PRODUCT INFO
342
SELECT ITEM
328
SELECT ITEM
336
346
318
SELECT ITEM
CREATE ITEM
320
SELECT ITEM
344
DISPLAY CLOSEST ITEMS
SELECT ITEM
348
TO A FIG. 5

FIG. 9

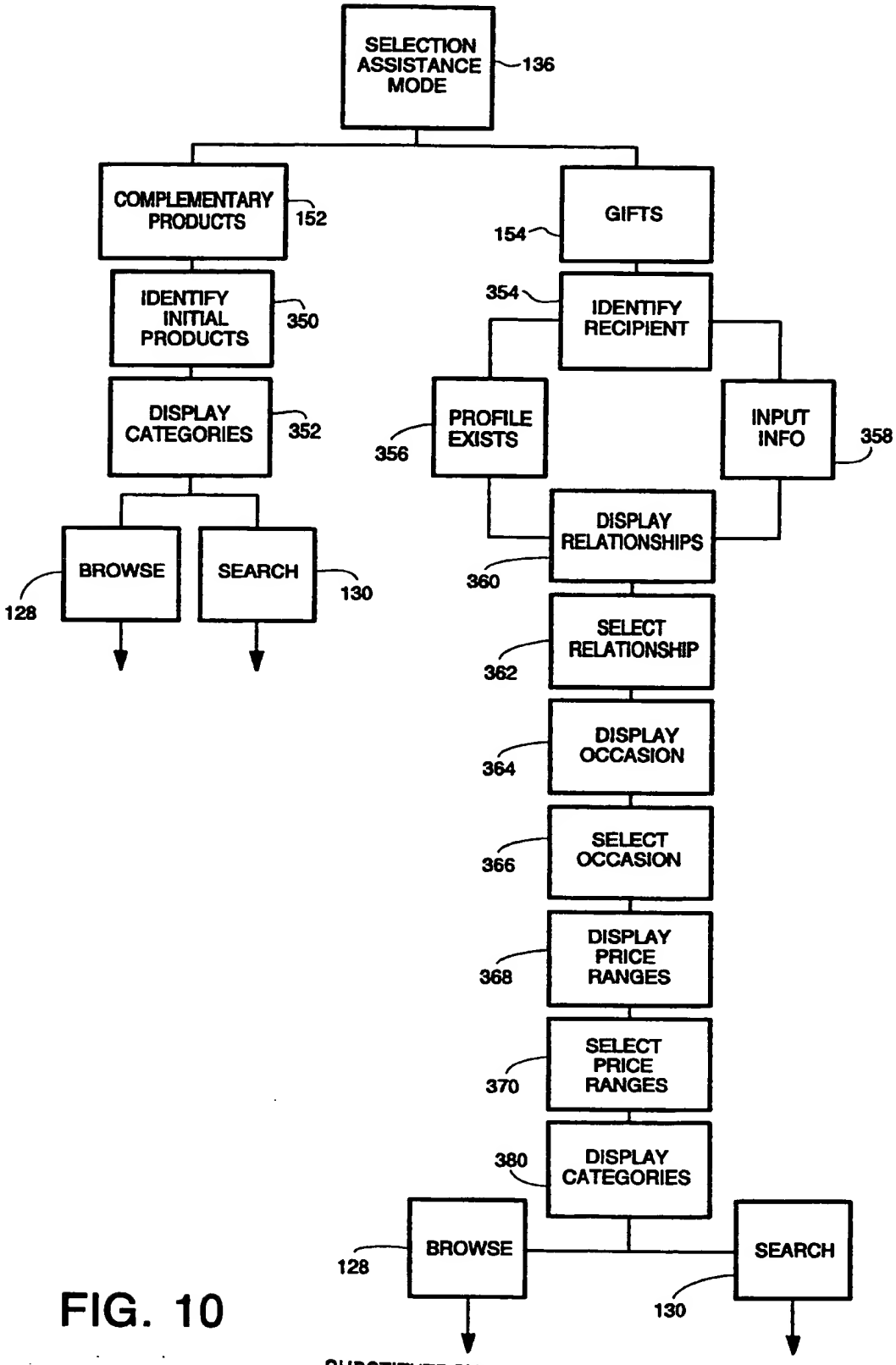

SELECTION ASSISTANCE MODE
136
COMPLEMENTARY PRODUCTS
152
GIFTS
154
IDENTIFY INITIAL PRODUCTS
350
354
IDENTIFY RECIPIENT
DISPLAY CATEGORIES
352
PROFILE EXISTS
356
INPUT INFO
358
DISPLAY RELATIONSHIPS
360
BROWSE
128
SEARCH
130
SELECT RELATIONSHIP
362
DISPLAY OCCASION
364
SELECT OCCASION
366
DISPLAY PRICE RANGES
368
SELECT PRICE RANGES
370
380
DISPLAY CATEGORIES
BROWSE
128
SEARCH
130

FIG. 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US95/03352

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :G06F 153:00
US CL :364/401

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 364/401, 402, 403, 479; 235/375, 380; 358/86

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US, A, 5,191,410 (MCCALLEY ET AL.) 02 March 1993, See col. 9, line 1 to col. 44, line 65.	1-9 and 12-23
A	US, A, 4,982,346 (GIROUARD ET AL.) 01 January 1991, See col. 3, line 56 to col. 20, line 22.	1-35
A	US, A, 4,734,764 (POCOCK ET AL.) 29 March 1988, See col. 7, line 29 to col. 14, line 12.	1-35
X ---- Y	US, A, 4,775,935, (YOURICK) 04 October 1988, See col. 3, line 56 to col. 19, line 23.	1-9, 12-23 ------ 10, 11, 20-22, 24-35

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be part of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 14 JUNE 1995	Date of mailing of the international search report 31 JUL 1995
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer GAIL HAYES Telephone No. (703) 305-9711

Form PCT/ISA/210 (second sheet)(July 1992)*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US95/03352

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 4,992,940 (DWORKIN) 12 February 1991, See col. 6, line 44 to col. 9, line 35.	1-35
A	US, A, 4,799,156 (SHAVIT ET AL.) 17 January 1989, See col. 7,line 6 to col. 14, line 62.	1-35
A	US, A, 4,959,686 (SPALLONE ET AL.) 25 September 1990, See col. 3, line 11 to col. 7, line n 16.	1-35
A	US, A, 5,172,413 (BRADLEY ET AL.) 15 December 1992, See col. 7, line 6 to col. 10, line 59.	1-35